

**NURSES' KNOWLEDGE OF GROWTH AND DEVELOPMENTAL  
PRINCIPLES IN MEETING PSYCHOSOCIAL NEEDS OF  
HOSPITALIZED CHILDREN**

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Master of Science in Nursing**

**by  
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## ABSTRACT

This was a replication of a study by Dr. Angela Gillis of Nova Scotia. A descriptive survey design was used to assess nurses' knowledge of growth and developmental principles when providing psychosocial care to children. Gillis' questionnaire was mailed to all known pediatric registered nurses of Iowa in 1995. Four hundred nineteen questionnaires were returned. Study results lend support to Gillis' findings regarding a need for improvement in the knowledge and application of growth and developmental principles by pediatric nurses. The study found instructors to be more knowledgeable than both staff nurses and supervisors. Master's prepared nurses were also more knowledgeable than nurses with both associate degrees and diploma preparation. The results of the study suggest ways to strengthen nurses' knowledge and accomplishments in this significant area of pediatric nursing.

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## CHAPTER ONE INTRODUCTION

### Overview of the Problem

Working collaboratively with other disciplines, nursing has accumulated knowledge of the psychosocial needs of hospitalized children (Betz, Hunzberger & Wright, 1994; Hart, Math, Slack & Powell, 1992; Mott, James & Sperhac, 1990; Petrillo and Sanger, 1980; Visintainer & Wolfer, 1975; Wong, 1995). Nursing educators, nursing service personnel, and nursing researchers recognize a critical need to apply what is known about nursing in the clinical practice setting (Frick, 1987; Gortner, 1975; Jacox, 1974; Morse and Conrad, 1983). In contemporary pediatric nursing, a major focus for the application of nursing knowledge is the nurse's understanding and use of the principles of growth and development.

Although knowledge of growth and developmental principles does not necessarily translate into integration of these principles into pediatric nursing

practice, knowledge is clearly an important antecedent to developmentally appropriate pediatric nursing care (Bigge, 1982). Overall, little information is available on nurses' understanding and application of principles of growth and development. Gillis (1990) studied nurses' knowledge of growth and developmental principles, scoring the respondent's knowledge of growth and developmental principles based on answers to questions about growth and development in pediatric nursing practice. She found a deficit of knowledge of growth and development among many of the pediatric nurses that she studied. In an attempt to suggest areas that lead to improved pediatric nursing practice, Gillis (1990) also explored the influence of various factors on the application of the principles of growth and development in the clinical setting. Some of the variables she examined were education and experience, inhibiting factors in the work setting, nurses' perceived importance of psychosocial factors in the pediatric work setting, nurses' perceived levels of job satisfaction, and the amount of positive reinforcement

the nurses received from members of the health care team for their age appropriate use of nursing measures. Gillis (1990) noted a lack of attention to the importance of growth and development in employment orientation programs for pediatric nurses. Additionally, the data from the Gillis (1990) study suggest that growth and development content was minimal in continuing education programs attended by pediatric nurses.

Replication of the Gillis study was needed to thoroughly assess the validity and generalizability of the findings. The Gillis findings are alarming in that much of what is central to pediatric nursing curricula may not be effectively guiding pediatric nursing practice. A more precise picture of current pediatric nursing practice was needed. Replication of the Gillis study, that was done in Canada, allowed for the study of subjects in the United States, where the study of human growth and development is also a major component of the nursing curricula. The Gillis study points to serious concerns about the knowledge of growth and

developmental principles by pediatric nurses. It was important to determine if the concerns suggested by the Gillis study are valid in the United States as well.

#### Purpose of the Study

There were two major foci of the study. One component of the study focused on the measurement of pediatric registered nurses' knowledge of growth and developmental principles in meeting psychosocial needs of hospitalized children and adolescents. Secondly, the study attempted to identify variables that influence the use of growth and developmental principles by registered nurses in the pediatric setting. The variables studied were education and experience, nurse perceptions of inhibiting factors in the work setting, nurses' perceived importance of job satisfaction, and the perception of positive reinforcement for the use of age appropriate nursing techniques in the practice setting.

This study was a replication of the Canadian study by Dr. Angela Gillis (1990). The Gillis findings suggest that there are gaps in nurses' knowledge of

basic principles of growth and development as applied to pediatric clinical nursing practice. A questionnaire was mailed to 1276 pediatric registered nurses who identified to the Iowa Board of Nursing that their primary area of nursing practice was pediatrics. Ninety-one of the questionnaires sent had invalid addresses, leaving 1185 questionnaires that should have reached their intended subjects. That number is greater than the 447 subjects in the eastern seaboard province of Canada where the Gillis study was completed. The Gillis subjects were employed in pediatric nursing and were members of a professional organization. In this study, a questionnaire was sent to all self-identified pediatric nurses in Iowa. These important differences allow for valuable comparisons of the data.

### Research Questions

The research questions were:

1. How accurate is the knowledge of growth and developmental principles of pediatric registered nurses?
2. To what extent do registered nurses apply growth and developmental principles to meet the psychosocial needs of pediatric patients?
3. What variables influence the use of these principles by registered nurses in the pediatric setting?
4. In what ways do registered nurses perceive that nursing education and nursing practice can assist nurses to meet the psychosocial needs of hospitalized children and adolescents?

### Definition of Terms:

Knowledge of Growth and Development: A score on the Knowledge of Growth and Development Test (KGDT), a 35-item criterion-referenced multiple choice test. The higher the score, the more accurate the knowledge. The score was measured as the number correct.

Growth and Development: The total way a person develops, that includes elements of physical, intellectual, social, and emotional changes.

Knowledge: Cognitive learning that includes components of comprehension, application, and critical thinking.

Pediatric patients: Infants and children from birth through adolescence who are in need of and provided with nursing care.

Pediatric registered nurses: Registered nurses in Iowa who self-reported to the board of nursing that their primary area of practice was pediatric nursing.

Psychosocial needs of hospitalized children: A wide range of needs that can be predicted based on knowledge of the child's age and level of development. The nurse assesses these needs after developing an interpersonal relationship with the child and/or the child's family. Examples include the need for comfort, the fear of pain, fear of separation from loved ones, and the need for play.

Variables influencing the application of growth and developmental principles:

1. Education
2. Experience
3. Nurse perceptions of inhibiting factors in the work place
4. Nurse perceptions of the importance of psychosocial factors in pediatric nursing care
5. Nurse perceptions of positive reinforcement by members of the health team for applying age appropriate nursing techniques in the pediatric practice setting

#### Overview of the Theoretical Framework

The collective theoretical works of numerous psychologists who developed theories to explain human development from conception to death comprise the broad term "developmental theory". Developmental theory has provided insight into personality development, genetics, maturation, learning, human needs, behavior, and gender influences that have been useful in nursing.



The influence of developmental theory has been especially important in pediatric nursing where nurses interact with children and their families.

Developmental theory provided the foundation for this study. This study was concerned with the application of the principles of human growth and development by pediatric nurses. The principles of growth and development derive from developmental theory, and are considered an important part of nursing curricula and pediatric nursing practice.

#### Overview of the Literature Review

The importance of the psychosocial care of children and an emphasis on growth and development is clearly identified in the nursing literature. This is evident in nursing curricular materials as well as in books and journals in the pediatric nursing literature. Descriptive and research articles stem from both pediatric nursing practice and pediatric nursing education. Numerous concepts of importance to pediatric nurses, such as the study of pain in children; children's reactions to hospitalization, procedures, and other stressors; and articles on

therapeutic play suggest that growth and developmental considerations are vital in providing appropriate care to children.

What is missing in the literature, aside from the Gillis (1990) study, are data that clarify the extent of pediatric nurses' knowledge and use of growth and developmental principles.

### Significance to Nursing

The discipline of nursing has a need to define its practice as clearly as possible. This study contributes to a better understanding of Iowa pediatric nurses' knowledge of principles of growth and development. Additionally, nurses' perceptions of factors that inhibit their application of the principles of growth and development in their work settings are indicated by the data. The study suggests identifiable barriers to implementation of nurses' knowledge. A better understanding of contemporary nursing practice is valuable in that it allows nurses, as individuals and groups, to focus attention on both the strengths and the weaknesses of pediatric nursing practice. An action plan can best be developed based on an accurate assessment of nurses' knowledge of growth and developmental principles and assessment of inhibiting factors in the work place.

Pediatric registered nurses in Iowa have limited opportunities to participate in nursing research that is closely related to their area of practice. The opportunity to participate in this study was without financial obligation on the part of the subjects. By

spending about thirty minutes, nurses contributed to nursing research that related directly to their practice. The need to align nursing research with nursing practice has been noted (Conant, 1967; Gortner, 1975; Morse & Conrad, 1983). As a descriptive study, the results are not prescriptive in nature. Still, the data give suggestions about pediatric nursing that are potentially of interest to pediatric nurses, perhaps generating ideas that relate to pediatric nursing practice.

Meleis (1989) called for the profession of nursing to globalize research efforts. Although this study is not of international scope, it has initiated written dialogue between this researcher and the Canadian researcher, Dr. Angela Gillis, who did the initial research in Canada. It is a beginning, and it supports the idea that nurses can form networks around the globe.

Doctoral programs are considered the educational level that prepares nurse researchers, and master's education prepares persons with advanced nursing knowledge and skills in specialized areas of practice (Nichols, 1993). By participating in research at the

master's level, there is an opportunity to gain a better understanding of the broad scope of nursing research and how one can prepare for leadership in the profession using nursing research in the specialized areas of practice.

## CHAPTER TWO REVIEW OF THE LITERATURE

### Theoretical Framework

Developmental theory, derived from the discipline of developmental psychology, guided this investigation. Like most disciplines, there are many frameworks representing different paradigms and perspectives within the major theories of developmental psychology. In the analysis of human development, six major concepts repeatedly appear and provided the foundation for understanding. The first concept integral to developmental theory is time or age. Developmental theory views an organism as changing progressively and sequentially to a more complex and more differentiated state, over time or with age. The second concept is progression. In developmental theory, development is characterized by movement in the direction of becoming or maturing. Stages or phases characterize the third major element of developmental theory. Developmental theory proposes that development progresses in a

sequential, orderly, predicted manner called stages or phases. Each stage or phase has prominent characteristics by which it is identified. The fourth concept inherent in developmental theory is critical periods or turning points. There are critical periods or turning points in every stage or phase of development. These critical periods may be characterized by tension or disequilibrium that may challenge the organism to move to the next stage of development. From neurophysiology, the concept of reciprocal interweaving is evident in developmental theory. Developmental theorists hypothesize that humans do not stay at the same level of development all of the time. There are both paired and opposed responses, and in times of stress, humans may regress for short periods of time. The final concept of developmental theory is forces. Developmental theorists disagree as to which forces, nature or nurture, influence human development. All agree, however, that there are forces in the environment that trigger development. These forces create

disequilibrium that push human beings to a higher level of development.

Hurlock (1968) summarized developmental research that is the foundation for the study of human development. Studies suggest that childhood is the foundation period of life and that development comes from maturation and learning. Additionally, Hurlock reported that studies indicate development follows a definite and predictable pattern, yet each individual is different. Hurlock also identified that each phase of development has characteristic traits, and that there are traditional beliefs about individuals of different ages.

Nurses use the principles of growth and development and apply the knowledge in ways that are unique to the discipline of nursing. The developmental theories have utility in pediatric nursing as nurses assess pediatric growth and development, provide anticipatory guidance to families, develop interpersonal relationships with pediatric patients and their families, and prepare teaching plans for children



and adolescents. A brief description of some of the major developmental theories is presented. They connote the complexity of the discipline of developmental psychology and a recognition that nursing has integrated knowledge from many developmental theories in the cultivation of nursing theory and practice.

For ease of explanation, the synopsis that follows will place the theories in the categories of psychodynamic theories, maturational theory, humanistic needs theory, cognitive theories, behavioral theories, and feminist theory.

#### Psychodynamic Theories: Personality Development

In Sigmund Freud's theory of psychoanalysis, an attempt was made to find a connection between the mind and the body (Mott, 1990). Freud described stages of psychosexual development, noting the influences of early childhood on behavior and physical health. Freud identified five stages of psychosexual development termed the oral stage, the anal stage, the phallic stage, latency, and the genital stage. Each

stage links to an erogenous zone that brings pleasure during that stage of development (Mott, 1990). In Freud's theory, the oral stage ranges from 0-18 months of age and is concerned with the sexual activities of sucking, swallowing, chewing, and biting. The erogenous zone for this stage includes the mouth, lips, tongue and teeth. The anal stage ranges from 8 months to 4 years and is typified by learning to control the expulsion and retention of waste products. The erogenous zone for this phase is the anus and buttocks. The genitals are the erogenous zone for the third stage, the phallic stage, that is noted from 3-7 years of age. The sexual activity of this stage is masturbation. The latent stage follows from 5-12 years. The last stage is the genital stage, from 12 - 20 years. The erogenous zone is the genitals and the sexual activities include masturbation, sexual intercourse, and feelings for others.

Havighurst (1953) described developmental tasks that arise from physical maturation, cultural pressures, and personal values for six major stages of

development. The tasks describe life from birth to death and include the stages of infancy and early childhood, middle childhood, adolescence, early adulthood, middle age, and later maturity.

Erik Erikson (1963) studied human development throughout the entire lifespan. In his theory, he described eight successive stages of human life. Although not unidirectional, in each stage he specified critical achievements that must be met in order to foster healthy personality development and progression to later stages of healthy personality development. In this theory, when needs are not met, an unhealthy outcome results that will influence future personality development (Erikson, 1963). The eight stages of psychosocial development are summarized.

1. Trust versus mistrust: Infancy (birth to 1 year).
2. Autonomy versus shame and doubt: Toddlerhood (1-3 years).
3. Initiative versus guilt: Preschool (3-6 years).
4. Industry versus inferiority: School age (6-12 years).

5. Identify versus role confusion: Adolescence (12-18 years).
6. Intimacy versus isolation: Young adulthood.
7. Generativity versus stagnation: Middle adulthood.
8. Ego integrity versus despair: Older adult.

A review of contemporary pediatric nursing texts reveals comprehensive reference to Erikson's theory. Numerous questions on the KGDT used in the instrument for this study are based on Erikson's theory.

The work of Margaret Mahler and Harry Stack Sullivan both were based on Freud's theory. Margaret Mahler (1979) studied infants and their mothers and developed a theory known as the intrapsychic separation-individuation process. In this theory, the mother of the infant begins as the infant's love object, satisfying all of the infant's needs. With further development, the infant is capable of separation-individuation, developing individual characteristics. This process is viewed as a gradual one, leading to an autonomous individual with a personal identity.

Harry Stack Sullivan (1945) identified self-concept as the focus of personality development.

Sullivan viewed the acquiring of a positive self-concept as important as meeting physical needs (Mott, 1990). In his interpersonal theory, he recognized a social environment that influences progression toward mature relationships. In Sullivan's model, the home environment plays a pivotal role in developing an early healthy self-concept. As children grow to adulthood, a positive self-concept yields security and avoids anxiety. Interestingly, Hildegard Peplau (1952), a major nursing theorist, worked with Harry Stack Sullivan. Many of Sullivan's ideas were incorporated into Peplau's theory of interpersonal relations in nursing.

Maturational Theory: The Role of Genetics in  
Development

Arnold Gesell (Gesell & Ilg, 1949) used the word maturation to describe developmental changes that result from genetics. Gesell theorized that readiness for developmental achievements are genetically preprogrammed, and that development results from the unfolding of the child's genetic inheritance. His work has been useful to nursing because it supports the comparison of children's development based on average

behaviors for children's ages. This comparison allows nurses to provide anticipatory guidance to parents based on predictions of future behaviors related to their genetically predetermined readiness. Gesell discounted prior practice or training as influential to the child's development, theorizing instead that behavioral trends coincide with chronological age.

Humanistic Needs Theory: Prioritizing Human Needs

Maslow's Hierarchy of Needs (Edelman & Mandle, 1994) has long been utilized in nursing to establish priorities of care. According to Maslow's hierarchy, human beings first must have physiologic needs such as air, food, water, elimination and rest met before they can be concerned with moving to the next level of needs. In the second level, the priority need is for activity, followed by the third level of safety and protection from harm. Love and a feeling of belonging to someone or to some group is the fourth level. The fifth level is the need for esteem (the need for respect of self and to be respected by others), followed by the highest level, termed self-actualization. Self actualization is described in Maslow's theory as the state of becoming a complete

person, fulfilling one's greatest potential (Edelman & Mandle, 1994). A key proposition in Maslow's theory is that needs at a lower level become priority, and the person will not be able to move to a higher level until lower level needs are met.

#### Cognitive Theories: Theories of Learning

The Swiss psychologist, Jean Piaget, is widely cited in the pediatric nursing literature. Piaget described stages of cognitive development up to fifteen years of age, after which he postulated that learning increased quantitatively, but not qualitatively (Phillips, 1975). A key concept in Piaget's theory is the sequential and predicable patterns of increasing cognitive ability. Piaget noted that as children participate in learning activities, they develop schemes and patterns of related thought that they use to understand the environment. The process of assimilation is used to integrate new experiences into existing schemes, and the process of accommodation, modifying or creating a new scheme, is used when new information cannot be assimilated.

Piaget described the sensorimotor stage of cognitive development from 0-2 years, whereby

youngsters' thoughts are influenced by the physical manipulation of objects and events. During the preoperational stage from 2-7 years, children learn symbolically, and language development is a major achievement. The concrete operations stage from 7-11 years is characterized by mental reasoning and logical thinking. True logical thought and abstract thinking emerge in the stage of formal operations, from 11-15 years of age. The KGDT (Knowledge of Growth and Development Test) developed by Gillis (1990) and used in this research, utilizes some principles from Piaget's theory of cognitive development.

Moral development is a specific aspect of cognitive development. Kohlberg (1981) broadened Piaget's theory to hypothesize how moral thinking develops. Kohlberg noted that moral development is linked to cognitive development. Kohlberg identified three levels of moral development. The first level is the preconventional level, that is characterized by self-interest. It begins with a fear of punishment, and then moves to a means of serving one's own desires as the motivation for doing right. The second level, the conventional level, is characterized by respect for



group ideals. The third level is the postconventional level, also called the level of principled thinking. In this level there is an awareness of the values of others. Not all persons reach this level, but those who do are aware of universal ethical principles. An interesting aspect of this theory is that modeling by others is considered influential in the development of moral standards.

The stages of faith development are described in James Fowler's cognitive theory. Fowler (1981) described six stages in the development of faith. Fowler noted that the age when children pass through these stages varies, but that the sequence does not vary (Mott, 1990). Fowler postulates that faith development gives meaning to life and that learning of faith is related to experiences in life. In Fowler's theory, the highest level of faith development is termed universal faith. Universal faith is characterized by a sense of oneness with a higher being and striving for universal love (Mott, 1990).

#### Behavioral Theories: Learned Responses

For B.F. Skinner (1974), the importance of the environment in learning is paramount. Skinner

theorized that learning can be controlled by proper structuring and response to actions. Skinner defined two types of behavioral responses to a stimulus. The first he called classical conditioning. In classical conditioning, a response is established by the association of a new stimulus with a stimulus that is known to cause an unconditioned response. The second behavioral response he termed operant conditioning. Skinner believed that the frequency of a response can be increased or decreased, depending upon how it is reinforced. Reinforcement can be either positive (causing pleasure) or negative (causing displeasure).

Bandura and Walters (1963) developed a theory of social learning, based on the idea that many behaviors are the result of imitation. Imitation is learning a new behavior pattern from observing and evaluating another's behavior. In the social learning theory, modeling is the value attached to an individual who demonstrates how, when and where to perform certain behaviors. Modeling can be a motivator of behavioral change, that is recurrent throughout life.

### Feminist Theory

Carol Gilligan was a student of Lawrence Kohlberg. Gilligan is credited with pointing out the problematic way in which many studies of development used male subjects and then generalized findings to both sexes (Cooper, 1989; Gilligan, 1982). She described limitations in developmental research and noted that the traditional assumptions of moral philosophy failed to account for the female experience. She stated that the traits that have traditionally defined the best of women's roles, their caring for and sensitivity to the needs of others, are the traits that mark them as deficient in moral development according to Kohlberg's research (Gilligan, 1982). This information helps nurses to view the works of many theorists more critically in terms of the gender implications.

### Implications for Nursing

An examination of nursing theories reveals that many nurse theorists have integrated concepts from developmental theory into their nursing theories. For example, Peplau (1952) was a student of Harry Stack Sullivan, and credits her appreciation of his work in the development of her theory on interpersonal

relations in nursing. Martha Rogers' evolutionary view of the concept of person (Fawcett, 1993) is consistent with the maturational component of developmental theory. Cooper (1989) made a direct comparison of Gilligan's theory of moral development and Jean Watson's nursing theory, noting important analogous views. The developmental theories presented here are by no means exhaustive, but rather serve to illustrate the complexity of the theoretical knowledge that is available for nurses to use in their practice of pediatric nursing.

Mott (1990), in describing the application of developmental theories to nursing practice, explained that because of the complexity of growth and development, it is necessary for nurses to understand the strengths and limitations of numerous developmental theories. Nurses will then find information from the theories useful as they assess children, plan nursing interventions, and teach family members to better care for children.

### Review of Pertinent Literature

The importance of the psychosocial care of hospitalized children based on their growth and development is well established in the literature (Betz, Hunzberger & Wright, 1994; Hart, Mather, Slack & Powell, 1992; Mott, James & Sperhac, 1994; Petrillo & Sanger, 1980; Pontious, 1982; Prugh, 1983; Wong, 1995). Thompson, (1985) reviewed the literature and identified that research indicates hospitalization is an emotional stressor for children and their families.

The emphasis on growth and developmental principles is linked to some important pediatric concepts. For example, the nursing literature describes specific nursing interventions that address the psychosocial needs of hospitalized children (Curry, 1988; Garot, 1986; Goldberger, 1988; LeVieux-Anglin & Sawyer, 1993; McCue, 1988; Meer, 1985; Oremland, 1988; Pontious, 1982; and Tiedeman, Simon, & Clatworthy, 1990). The psychological preparation of children for the stress of health care is another pediatric concept linked to growth and development. Researchers have studied methods to prepare children psychologically for the stress of health care experiences (LaMontagne,

1987; Patterson & Ware, 1988). Studies suggest the value of such activities, that are based on the recognition of the developmental level of the child by the nurse. Bates and Broome (1986) and Brennan (1994) reviewed the literature, noting both descriptive and research findings that indicate various methods such as hospital tours, play therapy, stress immunization, and filmed modeling have been used successfully to prepare children for the stress of hospitalization and surgery.

Additional concepts in pediatric care overlap with the use of growth and developmental principles. The specific developmental considerations in managing children with diabetes were described by Savinetti-Rose (1994). Lambert and Lambert (1995) studied the effects of humor in school-aged children. Their findings suggested that humor interventions led to increased immunity in school children (as measured by secretory immunoglobulin A levels). Developmental considerations are important in planning humor interventions.

Researchers have attempted to identify differences that may exist in the coping patterns of chronically ill children compared to their relatively healthy peers. Grey, Cameron, Lipman, and Thurber (1994)

compared the coping reactions of insulin dependent children and children without chronic illness. Their data suggested differences in coping patterns between diabetic children and children without chronic illness.

In the pediatric nursing literature, there are descriptive indications that knowledge of growth and developmental principles are used in the nursing process. The assessment of growth and development is carefully described in many pediatric nursing texts (Ball & Bindler, 1995; Betz, Hunzberger, & Wright, 1994; Mott, James & Sperhac, 1990; Thompson, 1995; Wong, 1995). Carpenito (1995) described the North American Nursing Diagnosis Association (NANDA) diagnostic category, Altered Growth and Development. This source included defining characteristics and possible etiologic factors leading to this nursing diagnosis. Guides to assessment were succinctly related, as well as outcome criteria and rationales for nursing care. Curry and Duby (1994) recommended developmental surveillance by pediatric nurses as a means of identifying children at risk and in need of early intervention and specialized services. Craft and Denehy (1990) and Snyder (1985) classified specific

nursing interventions for infants and children that considered the growth and development of the child.

In pediatric nursing education, several descriptive accounts indicate that nursing faculty are concerned about effectively teaching growth and developmental principles. In 1987, Frick identified a need for faculty to assist students in transferring knowledge of growth and developmental principles into the clinical practice setting. Frick described a nursing process framework for integrating growth and development content into clinical practice. Klien (1995) developed a novel teaching strategy called "The Toymakers" to provide students an opportunity to apply the growth and developmental principles learned. The application of developmental principles for young children in the intensive care unit was the subject of a continuing education unit published by Wilson and Broome (1989).

Gillis (1990) recognized the consensus that exists in the literature regarding the importance of applying the principles of growth and development in pediatric nursing. Importantly, Gillis also identified that no systematic investigation of nurses' knowledge of growth



and developmental principles or factors that influence nurses to apply the principles had been reported. Gillis (1990) attempted to clarify the extent of the knowledge of growth and developmental principles by pediatric nurses.

Gillis (1990) developed a questionnaire for a descriptive study that addressed the lack of clarity about pediatric nursing practice. The Gillis tool gathered biographical data about the study participants and asked about nurses' education and experience. An eight-item Likert scale, the IFWSS (Inhibiting Factors in the Work Setting Scale), measured variables in the work setting that may detract from the provision of developmentally appropriate pediatric nursing care. Sample items on the scale included heavy workload, lack of knowledge and lack of appropriate inservice programs. Gillis reported that the scale had a high internal consistency (Cronbach alpha=0.85) and a test-retest reliability coefficient of 0.87. The Gillis (1990) tool also assessed variables influencing the use of growth and developmental principles. The nurses' perceived importance of psychosocial factors in pediatric nursing, the perceived level of job

satisfaction of the nurse, and the amount of positive reinforcement received from members of the health team were measured using a Likert scale. For the questionnaire, Gillis (1990) developed the KGDT (Knowledge of Growth and Development Test), that used Bloom's taxonomy of educational objectives (1956) to provide a framework to test the subject's responses to nursing situations that required knowledge of growth and developmental principles. From Bloom's taxonomy of the cognitive domain, Gillis' tool, the KGDT (Knowledge of Growth and Development Test) assessed 25% at the level of knowledge/comprehension, 55% at the application level, and 20% at the level of critical thinking. The KGDT developed by Gillis is a 35-item, criterion-referenced, multiple choice test. The tool tested nurses' knowledge of growth and development in the conceptual dimensions of knowledge of play, teaching and procedure preparation, and the stages of psychosocial development. Gillis (1990) reported a high internal consistency (Cronbach alpha= 0.80) for the KGDT. Additionally, three open-ended questions were used to determine in what manner nursing education, nursing service, and continuing education

departments could assist nurses to apply principles of growth and development in their work with children.

Gillis (1990) conducted a descriptive research study, using a questionnaire mailed to 447 subjects who were pediatric registered nurses on the eastern seaboard of Canada. All of the subjects were employed in the nursing of children or adolescents and were members of a professional nursing organization. The subjects were asked to complete the questionnaire without referring to references.

The data from the Gillis (1990) study were analyzed based on 238 usable questionnaires. The sample was comprised of 98.3% females, and 1.7% males. In the Gillis study, work experience ranged from 1 to 30 years, with a mean of 8.85 years of work experience.

Gillis (1990) found areas for improvement in the important area of pediatric care. On the 35-item KGDT, the mean score was 27.29 (SD 2.17). Gillis interpreted this to suggest a knowledge deficit of growth and development principles. Gillis reported that only 27.5% of the subjects recalled a discussion of growth and development in their pediatric orientation program. Gillis also suggested that growth and development

issues were dealt with minimally or not at all in continuing education programs attended by the subjects. Using analysis of variance (ANOVA), Gillis noted significant differences in the variables of staff position and educational preparation when comparing KGDT scores. From her study, Gillis identified three factors as the most important obstacles in nurses' use of growth and development principles. The three identified by Gillis were lack of knowledge, lack of appropriate inservice programs, and poor examples from colleagues. Additionally, Gillis suggested that nurses receive minimal positive reinforcement for using age-appropriate nursing measures.

From the open-ended questions, Gillis (1990) reported suggestions by the subjects to support nursing personnel in applying growth and development principles. Gillis summarized the suggestions for nursing education to include the integration of growth and development principles throughout the entire nursing program, active involvement of nursing faculty in planning and presenting inservice programs for staff development, development of nursing audit criteria to evaluate use of age-appropriate nursing measures, and

the addition of an internship to nursing education programs that would allow students sufficient time to develop the necessary skill, competence, and confidence to provide comprehensive care. For nursing practice, 60% of the respondents identified a need for nursing management to emphasize the importance of the nurse's role in promoting positive developmental outcomes for ill or hospitalized children. Another theme reported by Gillis was that good role models who apply growth and development principles should be positively reinforced. Gillis also noted that developmental concerns should be emphasized on care plans and discussed in conferences using the nursing process.

The suggestions reported by Gillis (1990) to enhance the provision of developmentally appropriate nursing care for infants, children and adolescents are important. However, the Gillis study appears to be the only major study that attempted to make clear the extent of the knowledge of growth and developmental principles by pediatric nurses. The study was a rather small study and was conducted in Canada. A thorough search of the literature revealed no replication of the Gillis study or any similar studies in the United

States, where the study of growth and development is a major part of the nursing curricula. Because the data from the Gillis study are so compelling, and because the research is limited, replication of this study is important.

#### Summary of the Literature Review

Theoretical, descriptive, and research findings in the literature point to the importance of nurses' understanding and use of the principles of growth and development. Research findings suggest various effective strategies for nurses working with children that are based on growth and developmental principles. Unfortunately, little is known about nurses' knowledge and use of growth and developmental principles. This study replicated the only known study (Gillis, 1990) that was carried out in Canada, that examined this problem.

## CHAPTER THREE METHODOLOGY

### Research Design

A nonexperimental design was chosen for this research. The survey method was selected as the most appropriate to yield the descriptive information desired. Because of the large number of subjects, the questionnaires were mailed to the subjects of the study. The questionnaire chosen allowed for the collection of both quantitative and qualitative data.

### Sample

The subjects were all of the nurses in Iowa who self-identified to the Iowa Board of Nursing that their primary area of nursing practice was pediatrics. The roster was purchased from the Iowa Board of Nursing in September of 1994. Because a questionnaire was sent to each of the nurses on the roster, a sampling plan was not needed. The state of Iowa was chosen for its convenience for this researcher.

### Data Collection Instrument

The Gillis (1990) tool was divided into sections that (a) gathered demographic data; (b) identified education and experience; (c) identified information relating to nurses' orientation and continuing education; (d) assessed factors that may inhibit the application of growth and developmental principles in the work setting (the IFWSS); (e) assessed factors that may influence the application of growth and developmental principles; and (f) tested knowledge of growth and developmental principles (the KGDT). Section (c) was intentionally eliminated from the questionnaire in this study to de-emphasize the collection of data related to continuing education, which allowed for more efficient mailing of the questionnaires. The questionnaire allowed for subjects to comment on issues related to orientation and continuing education on the open-ended questions in this study.

Sections a, b, d, e, and f were used, however, due to an unfortunate typographical error, four of the



eight items on the IFWSS (Inhibiting Factors in the Work Setting Scale) were mistakenly omitted.

To assess the perception of nurses regarding factors that may inhibit them from applying growth and developmental principles in the workplace, the Inhibiting Factors in the Work Setting Scale (IFWSS) developed by Gillis (1990) was used. This portion of the tool measured variables that may be inhibiting factors in the work setting by using a Likert scale. Sample items on the scale included heavy workload, lack of knowledge and emphasis on technological care. Important obstacles were given a score of seven, and obstacles that were perceived as not important were given a score of one. Gillis (1990) reported that the scale had a high internal consistency (Cronbach alpha= 0.85) and a test-retest reliability of coefficient of 0.87.

Likert scale items also were used to obtain data about nurses' perceptions of variables that may influence the use of growth and development knowledge. Nurses' perceived importance of psychosocial factors in

pediatric nursing were rated on a Likert scale, with one as not at all important, and seven as very important. Nurses were asked to rate their perceived level of job satisfaction, with one as very dissatisfied, and seven as very satisfied. Positive reinforcement from various members of the health care team were rated by the subjects on a Likert scale, with one as never and seven as always. Data from the Likert scales were analyzed using mean scores.

The Knowledge of Growth and Development Test (KGDT) developed by Gillis (1990) was used for this study. The KGDT was a 35-item criterion-referenced, multiple choice test. The tool tested nurses' knowledge of growth and development in the conceptual dimensions of knowledge of play, teaching and procedure preparation, and the stages of psychosocial development. Gillis reported a high internal consistency (Cronbach alpha= 0.80) for the KGDT. The subjects were asked to complete the questionnaire without referring to references.

In this study, open-ended questions asked how nursing education and nursing practice may assist nurses in applying principles of growth and development in their work with children. Another open-ended question inquired of nurses' future career goals. The responses were analyzed by the process of content analysis.

#### Data Collection Procedures

Permission to use the Knowledge of Growth and Development Test (KGDT) and accompanying questionnaire (Appendix A) was received from Dr. Angela Gillis of Antigonish, Nova Scotia in April of 1994. One biographical question on the questionnaire about the highest level of education was revised. In September of 1994, a roster of all registered nurses in Iowa who reported to the Iowa Board of Nursing that their primary area of nursing practice is pediatrics was purchased from the Iowa Board of Nursing. The proposal was approved by the Drake University Human Subjects Review Committee. A thesis committee was formed that

approved the proposal for this research in October of 1994 (Appendix B).

In April of 1995, a pilot test was conducted on a group of ten pediatric registered nurses who are acquaintances of the researcher. Questionnaires were mailed to the subjects with a cover letter (Appendix C) that described the importance of the study and its voluntary nature. Consent was implied by a return of the questionnaire. Pilot study participants noted the time needed to complete the questionnaire. Eight pilot study participants returned their questionnaires. After careful consideration of the pilot test responses, several editorial corrections were made. It was deemed unnecessary to make further changes, and retesting was not needed. For the major study, the revised questionnaire with the KGDT (Appendix E) was mailed to 1276 registered nurses in Iowa who reported to the Iowa Board of Nursing that their primary area of practice was pediatric nursing. A cover letter, dated May 26, 1995, described the purpose of the research and the voluntary nature of participating in the study

(Appendix D). A statement was included that consent was implied via return of the questionnaire. Return postage was provided to the subjects. The materials were mailed via third class mail, and the questionnaires were coded to allow for follow-up mailing. Confidentiality of the responses was strictly protected. Subjects were asked to return the questionnaire within one week. The respondents returned the questionnaires in previously stamped business reply envelopes (first class mail) to the researcher at Iowa Valley Community College District.

A fairly steady stream of responses were received via return mail (first class business reply) until the end of June, 1995. As of July 3, 1995, 354 questionnaires had been returned. On July 3, 1995, a reminder card (Appendix F) was mailed to the 922 subjects who had not yet returned the questionnaire. Subjects were reminded that their responses were important, and were provided an address and a phone number of the researcher in the event they had misplaced their questionnaire. Eight of the subjects

either wrote or phoned to request another survey and were provided an additional questionnaire via first class mail. Ninety-one of the reminder cards were returned with inaccurate addresses. This return indicates that ninety-one subjects did not receive the original questionnaire that was mailed third class. An additional 65 questionnaires were received after the post card mailing, bringing the total response to 419, which was 35.36% of the total who likely received the questionnaire. The last questionnaires were received in September, 1995. Summaries of the study results were forwarded to nine of the subjects by their request. The responses were shredded at the conclusion of the research analysis.

#### Protection of Human Subjects

No serious risks were identified for those subjects who completed the questionnaire. Nurses in the pilot study reported the time to complete the questionnaire at 20-30 minutes. The cover letter that accompanied the questionnaire described the voluntary nature of the study. The consent of the respondents

was implied by the return of the questionnaire. Responses were confidential, and questionnaires were shredded at the conclusion of the research.

### Summary

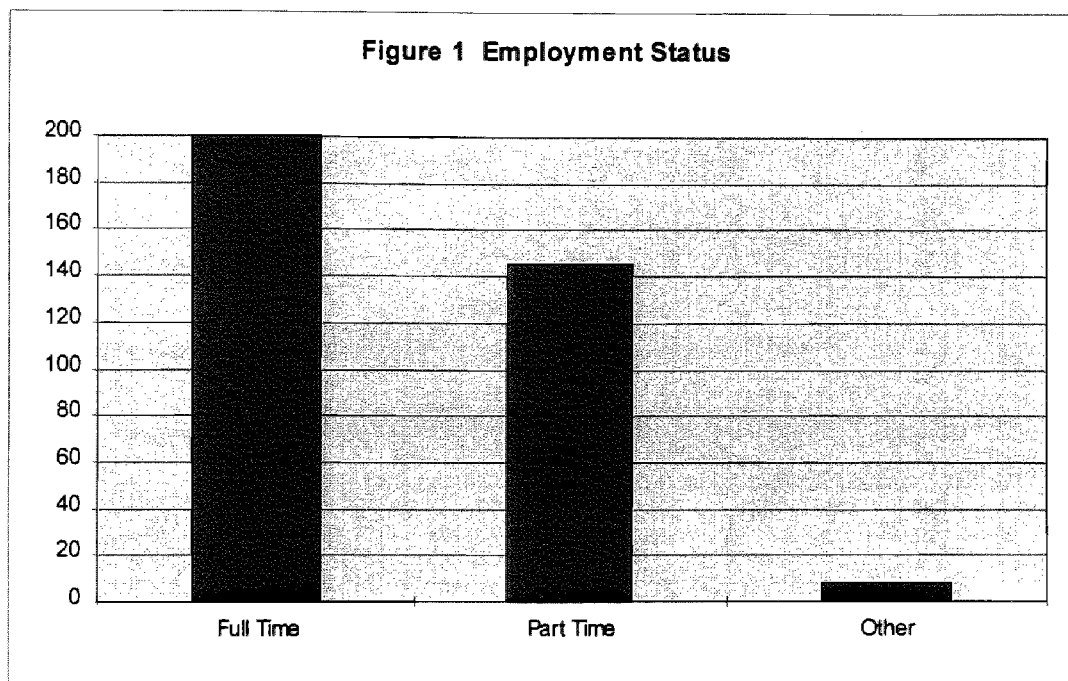
This descriptive study was a replication of a study by Angela Gillis (1990) to assess nurses' knowledge and use of growth and developmental principles in pediatric nursing. The study was completed using a questionnaire that was mailed to pediatric registered nurses in Iowa. The study was voluntary in nature, and the information was confidential.

## CHAPTER 4 ANALYSIS OF DATA

### Description of the Subjects

A total of 419 questionnaires were returned from the study respondents, which represents 35.36% of the questionnaires that were mailed to correct addresses. Responses from 62 subjects were not used for the study because subjects reported that they were not employed in pediatric nursing or because the questionnaire was returned unanswered. The number of usable responses for the questions varied, because not all questionnaires contained complete answers to all questions on the tool. All of the questions on the questionnaire had some responses that were inappropriate, such as multiple answers when one answer was requested. Those responses were not used for the data analysis. All of the other usable answers for the KGDT questions were included in the data analysis. The data were analyzed using a combination of both quantitative and qualitative methods. The following figures are presented to illustrate data about the employment status of the subjects (Figure 1) and the facilities wherein they were employed (Figure 2).





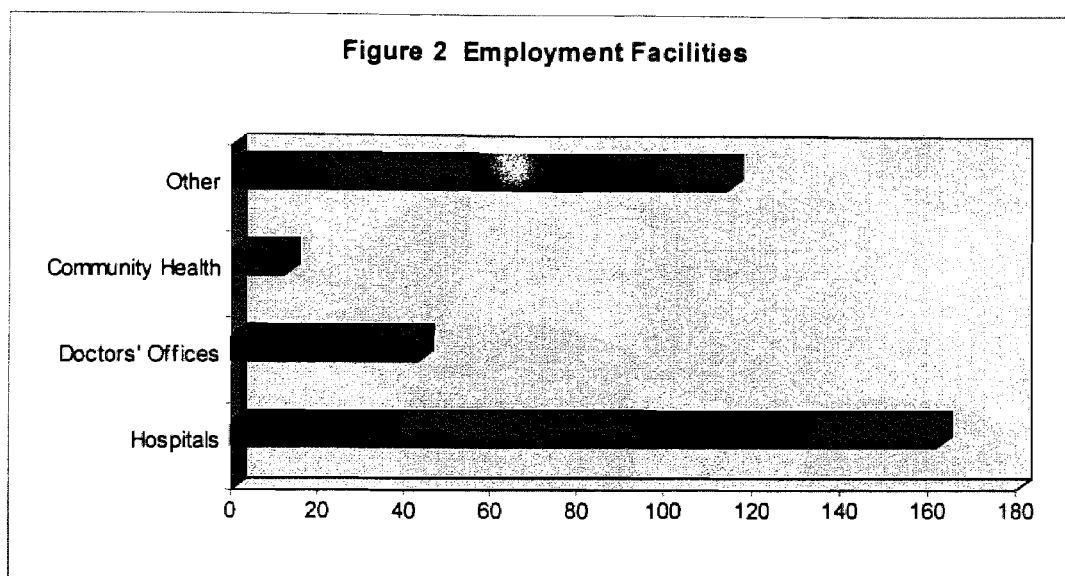
N= 353      Full time= 200

Part time= 145      Other= 8

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Insert Figure 2 about here

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N= 331      Community Health= 12

Doctors' Offices= 43      Hospitals= 162

Other= 114

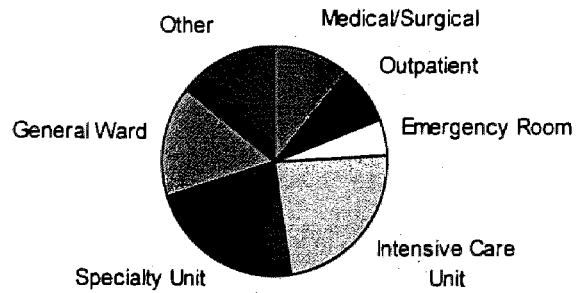
Of the 99 nurses who reported working in a children's hospital, the units where they practice were reported in Figure 3.

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Insert Figure 3 about here

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**Figure 3 Children's Hospital Unit**



N= 99    Medical/Surgical= 11    Outpatient= 8  
Emergency Room= 5            Intensive Care Unit= 23  
Specialty Unit= 22    Other= 14

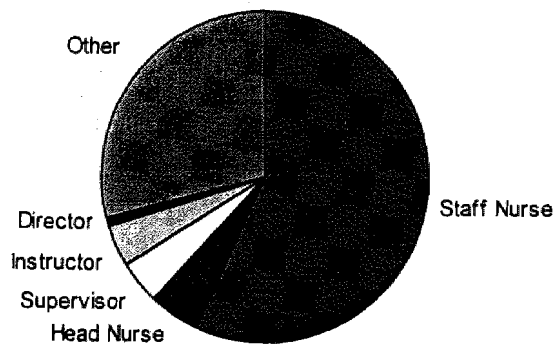
Nurse staff positions are summarized in Figure 4.

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Insert Figure 4 about here

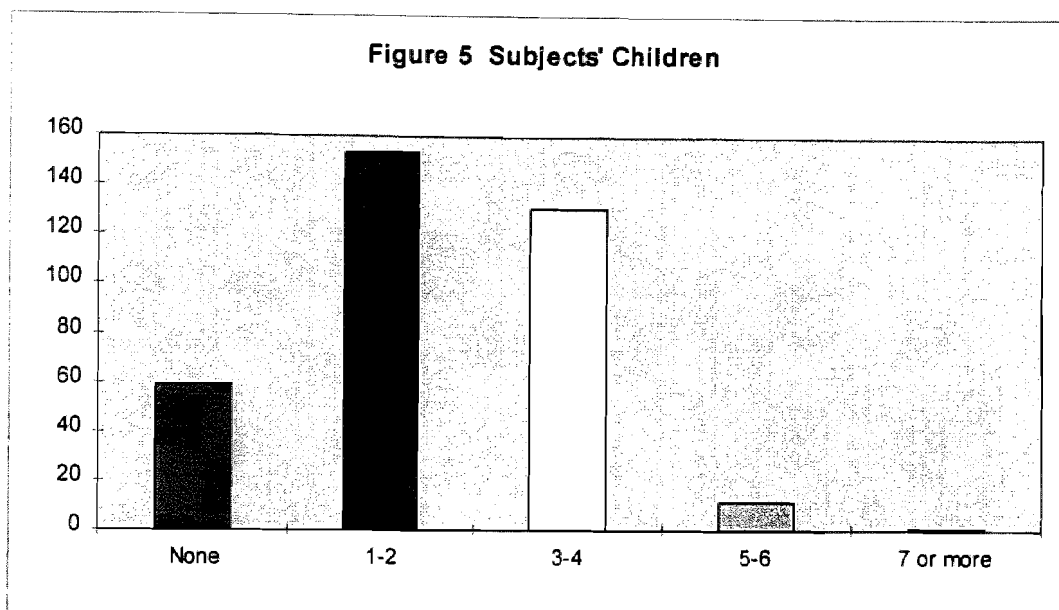
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Figure 4 Staff Position



N= 346      Staff Nurse= 196              Head Nurse= 17  
 Supervisor= 15      Instructor= 14      Director= 3  
 Other= 101

Of the 356 subjects who reported their marital status, 291 subjects (81.74%) reported they were married, 41 subjects (11.52%) reported they were single, 17 subjects (4.78%) reported they were divorced, 2 subjects (0.56%) reported they were separated, and 5 subjects (1.40%) reported they were widowed. Gender was reported to be 340 female (98.83%) and 4 male (1.16%). There were 297 subjects who reported they are parents, as demonstrated in Figure 5.



N= 356

None= 59

1-2= 153

3-4= 131

5-6= 12

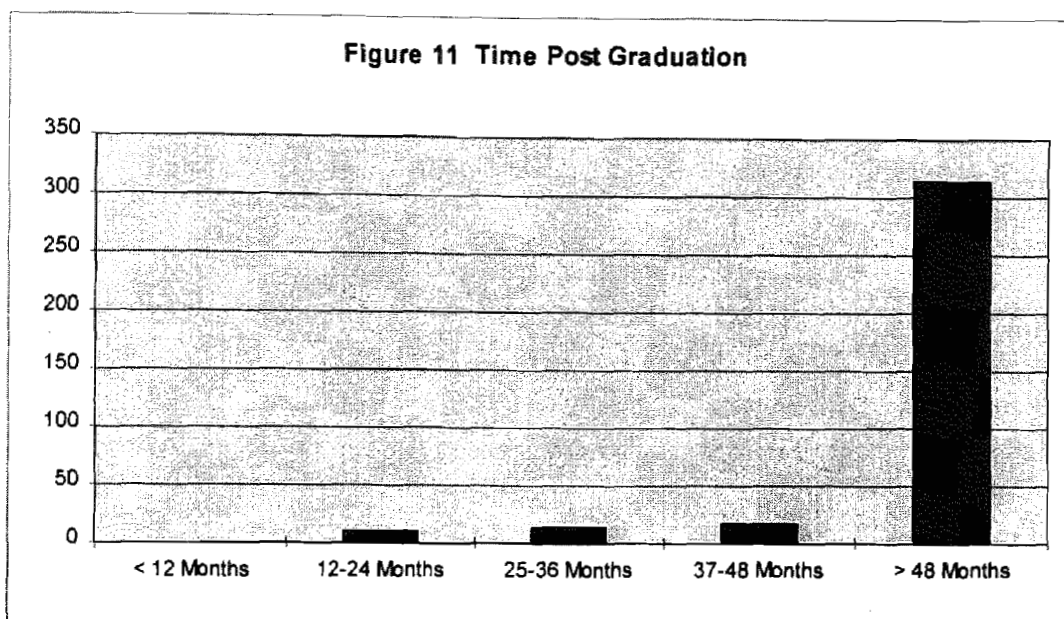
7 or more= 1

The amount of time that has elapsed since the subjects' graduation from their basic nursing program also was considered. Data revealed that 314 (74.94%) of the study participants had graduated from their basic nursing program at least five years prior to the study.

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Insert Figure 6 about here

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N= 356      Less than 12 Months= 0

12-24 Months= 11      25-36 Months= 13

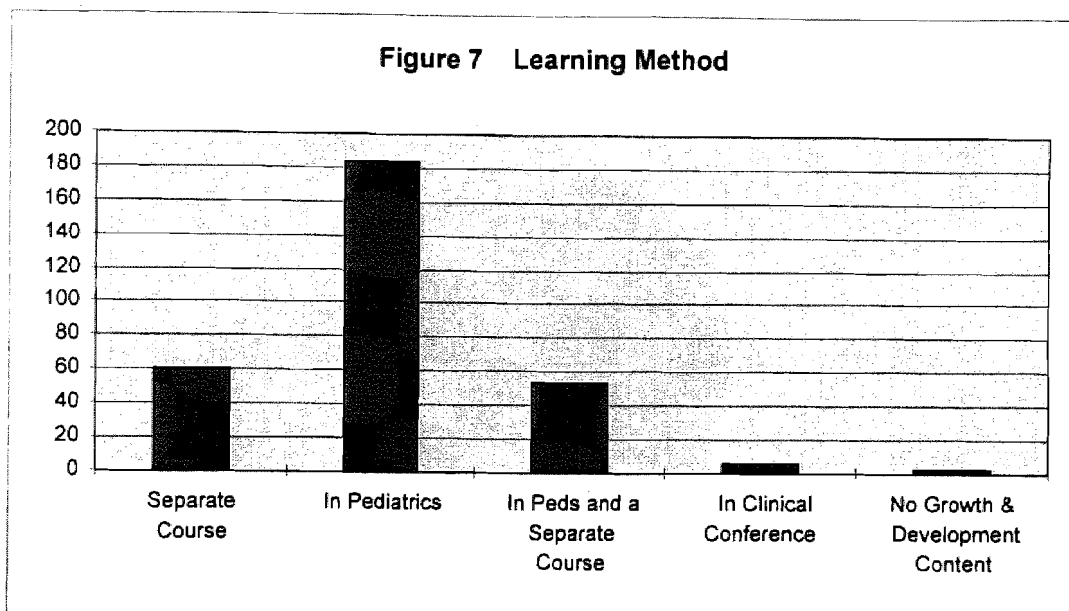
37-48 Months= 18      Greater than 48 Months= 314

The subjects were questioned about the learning method by which they were taught growth and developmental principles in their primary nursing program. The data from this question are summarized in Figure 7.

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Insert Figure 7 about here

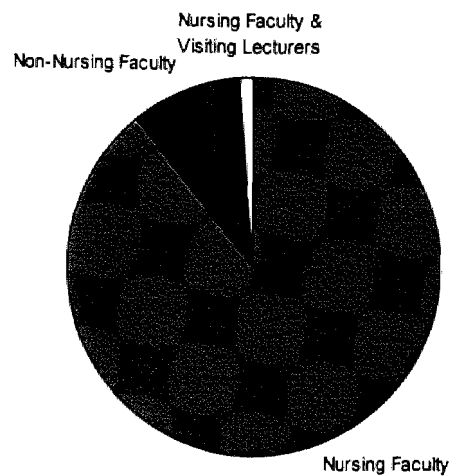
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N= 304      Separate Course= 60      In Pediatrics= 183  
 Incorporated throughout the program and in a  
 separate course= 53      In Clinical Conference= 6  
 No Growth and Development Content= 2

The providers of instruction for growth and development content in the subjects' nursing programs also were determined. Of those nurses who responded, 84.38% (270 of 320 respondents) listed nursing faculty as their provider of instruction for growth and development content. These data are provided in Figure 8.

**Figure 8 Growth and Development Instruction**



N= 320      Nursing Faculty= 270

Non-nursing Faculty= 30

Joint Effort by Nursing Faculty & Visiting  
Lecturers= 20

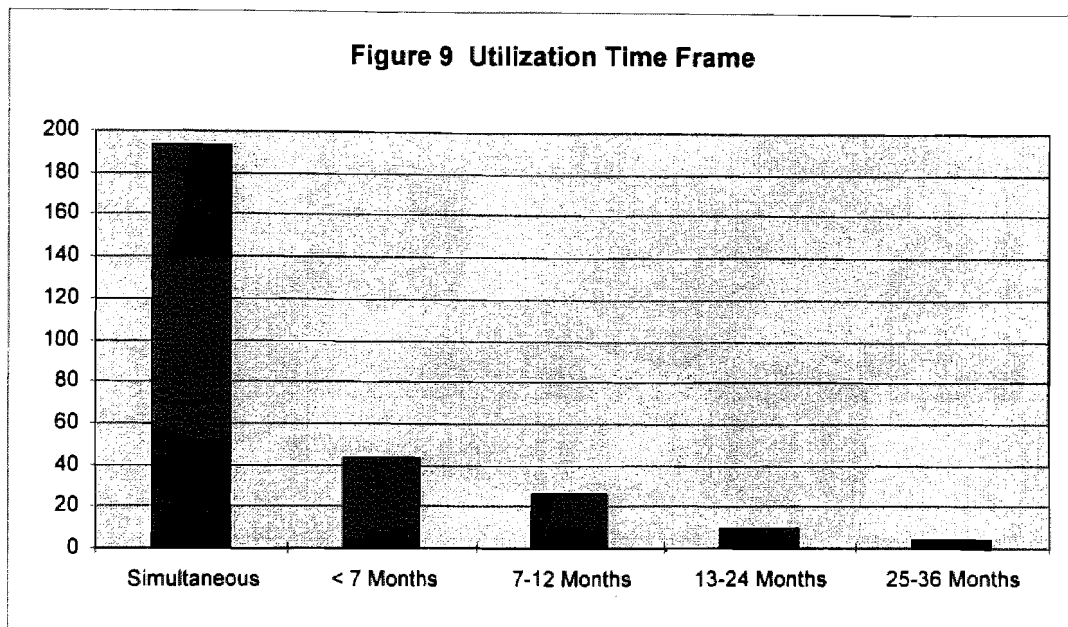
Most nurses reported simultaneously having the opportunity to study the growth and development content in theory and apply it in the practice setting. This time frame is reported in Figure 9.

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Insert Figure 9 about here

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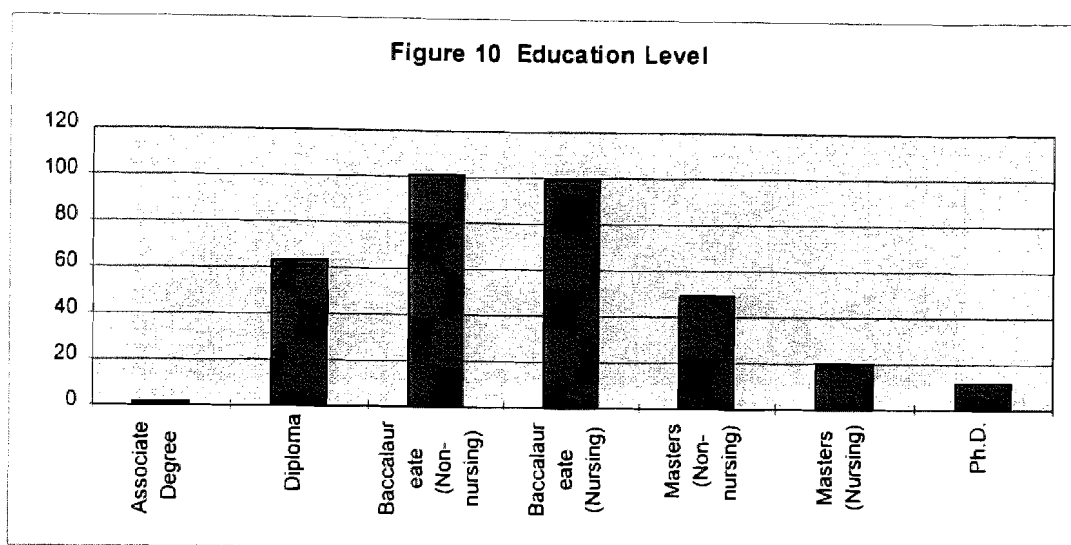
N= 276      Simultaneous= 193      Within 6 Months= 43  
7-12 Months= 26      13-24 Months= 10  
25-36 Months= 4

Subjects' educational levels are a key component of this study. The educational levels of the subjects are summarized in Figure 10.

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Insert Figure 10 about here

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N= 346

Associate degree= 2

Diploma= 63

Baccalaureate (Non-nursing)= 101

Baccalaureate (Nursing)= 99

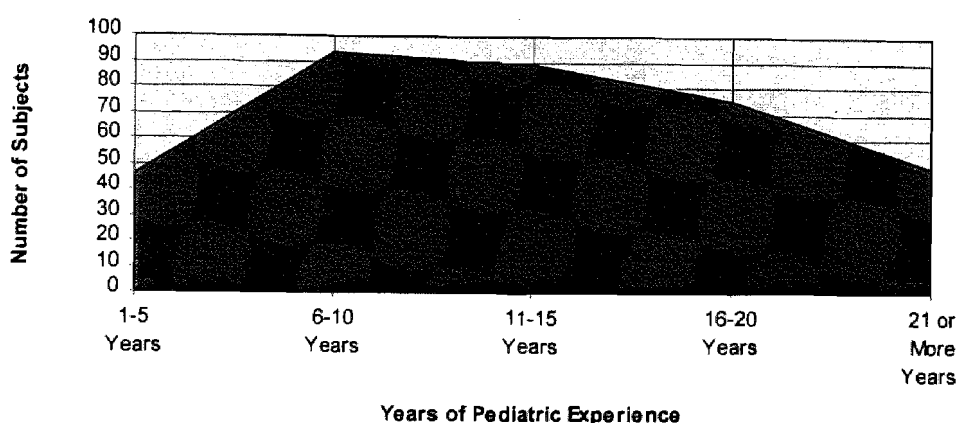
Master's (Non-nursing)= 49

Master's in Nursing= 20

Ph.D. (Nursing and Non-nursing)= 12

The subjects who responded to the survey tended to be experienced nurses, as illustrated in Figure 11.

Figure 11 Years of Pediatric Experience



N= 352      1-5 Years= 46 (31.1%)

6-10 Years= 93 (26.4%)      11-15= 89 (25.2%)

16-20= 75 (21.3%)      21 or More Years= 49 (13.9%)

### Research Questions

In this study, there were four basic research questions. The research questions were:

1. How accurate is the knowledge of growth and developmental principles of pediatric registered nurses?

2. To what extent do registered nurses apply growth and developmental principles to meet the psychosocial needs of pediatric patients?
3. What variables influence the use of these principles by registered nurses in the pediatric setting?
4. In what ways do registered nurses perceive that nursing education and nursing practice can assist nurses to meet the psychosocial needs of hospitalized children and adolescents?

#### Research Question One

The first research question was "How accurate is the knowledge of growth and developmental principles of pediatric registered nurses?". The KGDT (Knowledge of Growth and Development Test) had 35 test items and yielded a criterion-referenced score between 0 and 35 for each respondent. Of the 419 questionnaires returned, there were 356 (30.04%) with usable responses. Analysis of the KGDT scores produced a group mean score of 21.326, with a median score of

21.000 and a mode of 22. The standard deviation was 3.369.

The 35-item KGDT had five questions in each of seven conceptual dimensions that were (a) play, (b) infancy, (c) toddler, (d) preschool, (e) schoolage, (f) adolescence, and (g) teaching/preparation for procedures. The mean scores are reported for each of the conceptual dimensions of the Knowledge of Growth and Development Test in Table 1.

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Insert Table 1 about here

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Table 1.

Mean KGDT Scores by Conceptual Dimension

<u>Conceptual</u>	<u>Possible</u>	<u>Mean</u>	<u>Standard</u>
<u>Dimension</u>	<u>Correct</u>	<u>Score</u>	<u>Deviation</u>
Play	5	2.888	1.226
Infancy	5	3.486	1.127
Toddler	5	2.969	.938
Preschool	5	1.980	1.030
Schoolage	5	2.733	1.233
Adolescence	5	3.242	1.082
Teaching/ Preparation	5	3.191	.945

In each conceptual dimension there was a possibility of answering five questions correctly. As a whole, subjects answered the most questions correctly in the conceptual area of infancy (Mean score= 3.486) followed by adolescence (Mean score= 3.242) and teaching/preparation (Mean score= 3.191). These were followed by the conceptual areas of toddlerhood

(Mean score= 2.969) and then play (Mean score= 2.888). Subjects answered the fewest questions correctly in the conceptual areas of schoolage (Mean score= 2.733) and preschool (Mean score= 1.980).

#### Research Question Two

The second research question was "To what extent do registered nurses apply growth and developmental principles to meet the psychosocial needs of pediatric patients?". Data were collected regarding the relevance of growth and development to present work experience. When nurses were asked to rate how relevant pediatric psychosocial content was to their present work experience, 52.9 percent rated it as four or less, with one representing a minimal amount, and seven representing an extensive amount on a Likert scale. Likert scales were also used to collect data on nursing process activities, several of which included psychosocial interventions, where nurses described the importance of the nursing process activities in their work settings. One on the Likert scale represented not at all important and seven on the Likert scale

represented very important. The respondents' ratings of pediatric psychosocial nursing process activities were compared by examining the mean scores, as illustrated in Table 2.

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Insert Table 2 about here

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Table 2.

Mean KGDT Scores of Nursing Process Activities

Nursing Process Activity	Mean Score
1. Providing Emotional Support	6.504
2. Encouraging Parenting and Participation in Care	6.432
3. Teaching Parents Home Management of Illness	6.172
4. Recognizing and Reporting Significant Physical Developments	6.161
5. Encouraging Children to Express Feelings	5.866
6. Identifying Nursing Problems	5.793
7. Dispensing Medications	5.577
8. Transcribing Orders	4.358
9. Collecting and Transporting Specimens	3.637

### Research Question Three

Research question number three asked "What variables influence the use of these principles by registered nurses in the pediatric setting?". Analysis of variance (ANOVA) tests were used to determine the influence of numerous independent variables on respondent's KGDT scores. The independent variables tested were the subjects' levels of education, their years post graduation from their basic nursing program, their places of employment, their years of experience, their staff positions, their marital status, and their number of children. For each ANOVA, a level of significance of 0.05 was chosen. The following variables were found not to be significant at the .05 level of significance: years post graduation from the subjects' basic nursing program, places of employment, years of experience, marital status and number of children. The only independent variables that were found to be significant at the .05 level were the level

of education and the staff position. The ANOVA results for these independent variables are reported in Tables 3 and 4.

Table 3.

Analysis of Variance (ANOVA) for Maximum Education

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	6	404.722	67.4538	6.5686	.0000
Within Groups	344	3532.59	10.2692		
Total	350	3937.32			

Table 4.

Analysis of Variance (ANOVA) for Staff Position

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	5	226.770	45.3542	4.2726	.0009
Within Groups	337	3577.29	10.6151		
Total	342	3804.07			

The respondents' mean scores by level of education are illustrated in Table 5.

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Insert Table 5 about here

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Table 5.

Mean KGDT Scores by Level of Education

Level of Education	Mean KGDT Scores
Associate Degree	20.2222
Diploma	20.3415
Baccalaureate (Non-Nursing)	22.4333
Baccalaureate in Nursing	21.4700
Master's (Non-nursing)	23.3071
Master's in Nursing	23.4000
Ph.D.	21.7500

The Scheffe' Post Hoc Test was used to determine the significance of the above differences. At the .05 level of significance, the master's level KGDT scores were found to be significantly higher than the associate degree level and the diploma level KGDT scores. None of the other differences in level of education were found to be statistically significant at the .05 level.

The respondents' mean KGDT scores by their staff position are illustrated in Table 6.

Table 6.

Mean KGDT Scores by Staff Position

Staff Position	Mean KGDT Scores
Staff Nurses	20.9077
Head Nurses	21.5294
Supervisors	19.8000
Instructors	24.3571
Directors	23.0000
Others	21.7778

The Scheffe' Post Hoc Test was used to determine which groups scored significantly different than the other groups by staff position. The instructors' KGDT scores were found to be significantly higher than the scores of both the staff nurses and the supervisors. The other differences in scores were found not to be statistically significant ( $p = .05$ ).

Study respondents were asked to rate numerous factors that might inhibit nurses from applying growth and development concepts in the work setting. The factors rated on a seven point Likert scale were heavy workload, lack of knowledge, lack of response from the child, and emphasis on technological cares. Analysis of the means suggest that of these factors, heavy workload (Mean = 5.209) is the greatest obstacle, followed by an emphasis on technological care (Mean = 4.140). The lack of response from the child had a mean of 3.840 and a lack of knowledge rated lowest with a mean of 3.821. When study participants were asked to rate their perceived importance of psychosocial factors in caring for pediatric patients, the mean was 6.497 on a seven point Likert scale.

Another factor that may inhibit pediatric nurses from using growth and developmental principles is a lack of positive reinforcement by others in the work setting. Study participants were asked to describe the frequency with which they received positive reinforcement for using age appropriate nursing

measures from each of the following: staff nurse, head nurse, supervisor, instructor, director, physician, and therapist. On a six point scale, with one as never and six as always, respondents rated positive reinforcement lowest from directors (Mean = 1.768) and instructors (Mean = 1.884). Rated next were supervisors (Mean = 2.258) and therapists (Mean = 2.405).

Physicians' positive reinforcement yielded a mean of 2.639, that falls between "rarely" and "seldom". The highest rating for positive reinforcement came from staff nurses, with a mean rating of 3.235, that falls on the scale between "seldom" and "on occasion".

Despite the poor rating of positive reinforcement provided by others, pediatric nurses rated their level of overall job satisfaction high, with a mean of 6.003 (SD = 1.070) on a seven point Likert scale with one as very dissatisfied and seven as very satisfied.

#### Research Question Four

Research question number four was "In what ways do registered nurses perceive that nursing education and nursing practice can assist nurses to meet the



psychosocial needs of hospitalized children and adolescents?". The data for analysis of this question were obtained from the open ended questions on the tool and were analyzed qualitatively. The process of content analysis (Stern, 1985) was used to identify recurring themes in the responses to the open-ended questions.

The responses to the question about nursing education were organized into four basic themes: 1) inservice; 2) suggested student practice settings; 3) hands on clinical practice; and 4) specific curricular suggestions. Fifty-two respondents specifically linked the provision of inservice or continuing education programs with the delivery of developmentally appropriate care. This study differed from the Gillis (1990) study in its treatment of the topic of continuing education. In the current study, the quantitative data collection about continuing education was purposely deleted. Notwithstanding the deletion of specific questions on the tool, when given an opportunity to respond to open-ended questions, many

respondents identified their concerns about an adequate emphasis on continuing education for nurses in the content area of growth and development.

The most frequently reported suggestions for nursing education to apply to assist nurses in providing appropriate psychosocial pediatric care were: (1) utilizing outpatient settings for both sick and well children; and (2) maintaining strong hands-on care of children in the clinical rotations. Many reported a feeling that pediatric clinical rotations are not given the priority that is needed.

A very wide range of curricular suggestions were reported and were reflective of methods of teaching and philosophy of pediatric nursing. They included a heavy emphasis on growth and development theoretical content, numerous teaching methods, and a strong emphasis on the family unit. Additionally, there were suggestions that education needs to relay research information and needs to incorporate experts in the field. Some respondents commented on issues specific

to pediatric care, such as pain in children and therapeutic play.

Content analysis of the responses about nursing practice assisting nurses to meet psychosocial needs of pediatric patients was also carried out. Themes identified from this question were: (1) the importance of families; (2) adequate staffing; (3) adequate resources and support; and (4) valuing the specialty area of pediatric practice.

Respondents indicated a concern for families in the areas of support, resources, and family teaching. Some were frustrated with the lack of resources or consideration for families.

The greatest number of responses in the area of nursing practice related to the categories of adequate staffing and resources/support. Numerous respondents indicated budget cuts, heavier workloads, increased paperwork, and increased technology were responsible for the lack of time for interacting with children and parents. Many respondents documented that administrators need to understand that psychosocial

needs are overlooked when the patient/nurse ratio increases. Support and resources identified as beneficial included greater job security, seminars, growth and development files, videos and other audio-visual materials, visiting lecturers, nurses' knowledge in this area, increased use of play activities, standardized care plans addressing psychosocial needs, and positive feedback.

The need to value the specialty area of pediatric nursing practice was a recurring theme. Several nurses indicated a lack of understanding of the high level of stress on nurses who work with children, especially critically ill infants and children. The move from an illness model of care to a wellness model of care, and the importance of pediatric nurses in this model was clearly articulated by several nurses. The need for research based practice was also reported by many respondents.

### Additional Findings

An open ended question asked, "What are your career goals?". Twenty-four respondents indicated that they are currently pursuing further education, or would like to do so. Twelve of the 24 were interested in Masters in Nursing and one in a Ph.D. in Nursing. Twelve nurses responded with plans for retirement. Thirty-five respondents indicated they intended to remain in their current positions. Certification was mentioned by seven nurses. Advanced practice, as nurse practitioners or clinical nurse specialists, was the goal reported by 19 respondents. Twenty-three nurses reported they had a career goal that involved a career change within nursing. One respondent indicated a career goal was to increase income and two subjects indicated they would like to leave nursing.

Subjects were asked to describe how much of their undergraduate nursing education dealt with pediatric psychosocial developmental issues. This background question seemed important because nurses who had little preparation in their educational program would not be

expected to have the ability to apply the growth and developmental principles in the work setting (Bigge, 1982). Data indicate that nurses in this study recalled that pediatric psychosocial principles were not a heavy focus in their undergraduate nursing education programs. Ratings by 90.8% of the study respondents were at four or less on a Likert scale with one representing a minimal amount and seven representing an extensive amount.

Respondents were asked to rate the effectiveness of the following teaching methods as a means to learn about pediatric psychosocial development theory: lecture, structured group discussion, informal group discussion, self-directed learning guide, and observation of children and discussion. Respondents rated these teaching methods on a seven point Likert scale. The mean scores for the teaching methods are shown in Table 7.

Table 7.

Mean KGDT Scores for Teaching Methods

Teaching Method	Mean KGDT Score
Observation of Children and Discussion	6.19
Structured Group Discussion	4.71
Lecture	4.65
Informal Group Discussions	4.48
Self-directed Learning Guides	3.99

## CHAPTER 5 DISCUSSION, RECOMMENDATIONS AND IMPLICATIONS

### Discussion of Findings

The 35.36% return of questionnaires in this study was considerably less than the 60.1% reported by Gillis (1990). The nature of this difference is not known. The population examined in the Gillis (1990) study, however, included nurses in a professional association in Canada, while the questionnaires in the current study were sent to all known pediatric nurses in Iowa. This difference may have been a factor that affected the return rate. The biographical data show that the responses came from nurses who ranged in age, education, number of children, and experience. It is impossible to conclude, however, that the respondents are typical of the population studied.

### Research Question One

The first research question in this study was, "How accurate is the knowledge of growth and developmental principles of pediatric registered



nurses?". The group mean score of 21.30 on the KGDT in this study is less than the group mean score of 27.29 reported by Gillis. The data suggest that there are areas of weakness in nurses' knowledge of growth and developmental principles. The results of this study are congruent with the Gillis findings in the area of pediatric nurses' knowledge, and provide additional evidence of the need for more accurate pediatric nursing knowledge of growth and developmental principles.

Analysis of the scores in the conceptual dimensions showed that subjects scored highest in the conceptual areas of infancy, followed by adolescence and teaching/ preparation. These were followed by the conceptual areas of toddlerhood and then play. Subjects answered the fewest questions correctly in the areas of schoolage and preschool development. These findings differed from the Gillis (1990) study, whose subjects scored poorest in the area of infancy. Gillis reported subjects' highest scores in the conceptual area of teaching/preparation. Reasons for these

differences are speculative, but include differences in the emphasis of these areas in educational programs, or differences in interpretation of the test questions due to cultural differences. More evidence is needed to clarify this relationship.

#### Research Question Two

The second research question in this study asked, "To what extent do registered nurses apply growth and developmental principles to meet the psychosocial needs of pediatric patients?". Nurses' perceptions of relevance of the principles of growth and development from the content they learned in their basic nursing program were considered a factor that would influence their efforts in applying the growth and developmental principles. Data indicated that 52.9% of the subjects rated the relevance of psychosocial content from their nursing program to their present work experience at four or less on a Likert scale of one to seven (one represented a minimal amount and seven represented an extensive amount).

Subjects were also asked to rate the importance of various nursing process activities as they related to their work settings. This author concluded that, among the nursing process activities listed on the questionnaire, the tasks that require much psychosocial intervention and knowledge of growth and development by nurses are: (1) providing emotional support to children; (2) teaching parents home management of illness; (3) preparing children psychologically for procedures and surgery; (4) encouraging children to express feelings; and (5) encouraging parenting and participation in care. The tasks listed on the questionnaire that this author deemed less likely to require psychosocial interventions by nurses included: (1) transcribing doctors' orders; (2) identifying nursing problems; (3) dispensing medications; (4) recognizing and reporting significant physical development; and (5) collecting and transporting specimens. Data analysis showed that the psychosocially related nursing process activities were rated favorably, compared to the other nursing process

activities. The reasons that subjects rated the relevance of pediatric psychosocial content they learned in their nursing program to their current work setting relatively low, yet evaluated specific nursing process activities with a high psychosocial component relatively high are unclear. Interestingly, when study participants were asked to rate their perceived importance of psychosocial factors in caring for pediatric patients, the mean was 6.497 on a seven point Likert scale. These data suggest that pediatric nurses view psychosocial factors as very important. Perhaps the nurse subjects did not consider that many of the day to day activities they consider routine required psychosocial developmental knowledge that might have been taught in their nursing curricula. Another possibility is that they view their nursing curricular preparation as ineffective in preparing them for pediatric nursing practice.

There is a lack of precision in the questionnaire for adequately addressing this research question. The research question posed by Gillis is of interest, but

in future studies, a recommendation would be to revise Section 3 of the questionnaire. The questionnaire could be amended to assess specific pediatric nursing interventions, rather than nursing process activities. This change would facilitate comparisons of like activities for their depth of application of growth and developmental principles. This difficulty in the current study must be recognized in interpreting the data for research question two.

#### Research Question Three

This study's third research question asked, "What variables influence the use of growth and developmental principles by registered nurses in the pediatric setting?". The Gillis (1990) study assessed eight factors that may inhibit nurses from applying growth and development concepts in the work setting. The factors assessed by Gillis (1990) were lack of knowledge, lack of inservice, poor role models, lack of response from the child, shortage of staff, heavy workload, emphasis on technology, and professional burnout. Unfortunately, due to a typographical error,

only four of those factors assessed by Gillis were included on the questionnaire for this study. The four included in this study were heavy workload, lack of knowledge, lack of response from the child, and emphasis on technological care. Analysis of the means suggest that, of these four factors, heavy workload and an emphasis on technological care were rated by the subjects as the greatest obstacles that inhibit nurses from applying growth and development concepts in the work setting. Interestingly, these data were supported by the content analysis of the qualitative questions of the questionnaire, in that a lack of adequate staffing and increased technology were identified as barriers to the provision of developmentally appropriate pediatric nursing care. Gillis (1990) reported lack of knowledge and lack of response from the child were rated as greater barriers than heavy workload and an emphasis on technology of care. The reasons for this difference are not known, but it may be that changes in the work setting have occurred since 1990 that made the heavy workload and emphasis on technological care more of a

factor in 1995 when this study was conducted. Gillis assessed professional burnout and found it to be the least important factor of the eight that were assessed in her 1990 study. While this factor was one of those inadvertently omitted in this study, the content analysis of the qualitative data did not identify professional burnout as an inhibiting factor, which is consistent with the Gillis (1990) findings.

The lack of positive reinforcement in the work setting is a factor that may inhibit pediatric nurses from using growth and developmental principles in the work setting. Subjects gave the highest rating for positive reinforcement to staff nurses, followed by physicians. In the Gillis (1990) study, the highest rating also was for staff nurses, however in her study, the lowest rating was for physicians. A chief concern in both studies is the overall low rating of positive reinforcement for using age appropriate measures in providing nursing care. The results of this study provide additional evidence that there is room for

improvement in the area of positive reinforcement for using age appropriate nursing measures.

An important consideration is that, notwithstanding the poor ratings for positive reinforcement provided by others, the study subjects rated their level of overall job satisfaction as high, with a mean of 6.003 (SD = 1.070) on a seven point Likert scale. One open-ended question on the questionnaire gave subjects an opportunity to describe their career goals. Analysis of the responses indicated that only two subjects indicated they would like to leave nursing.

Analysis of Variance (ANOVA) was used to determine the influence of a number of independent variables on the subject's KGDT. The subjects' years post graduation from their basic nursing program, their places of employment, their years of experience, their marital status, and their number of children were all found not to be significant ( $p = .05$ ) to their KGDT scores. The variables of maximum education and staff



position related to KGDT scores were significant at the .05 level of significance.

The Scheffe' post hoc test revealed that at the master's in nursing level of education, KGDT scores were significantly higher than both the associate degree and the diploma level of education ( $p = .05$ ). Gillis (1990) reported that master's prepared nurses scored significantly higher than post-RN degree, baccalaureate prepared, and diploma nurses. Together, the findings of this research and the Gillis (1990) study support the advantages of master's preparation in nursing. In both studies, the nurses with master's preparation in nursing scored significantly higher than nurses at other levels of educational preparation.

The Scheffe' post hoc tests also found significant differences in KGDT scores between nursing instructors and staff nurses and between nursing instructors and supervisors ( $p = .05$ ). The data are similar to that reported by Gillis (1990) who also noted that instructors scored significantly better than staff nurses and supervisors. In her study, Gillis (1990)

reported that instructors also scored significantly higher than head nurses.

#### Research Question Four

The last research question was "In what ways do registered nurses perceive that nursing education and nursing practice can assist nurses to meet the psychosocial needs of hospitalized children and adolescents?". In the area of education, the heavy response advocating practical application of growth and developmental principles in nursing education is consistent with the literature (Frick, 1987; Klien, 1995). This finding is especially significant for nurse educators because the responses included numerous suggestions for maintaining strong clinical components in pediatric nursing education. Many subjects emphasized the use of outpatient settings like schools, child care facilities, and clinics for student nurse experiences with both sick and well children.

Themes identified from the nursing practice responses included the importance and consideration of families, adequate staffing, adequate resources and

support, and valuing the specialty area of pediatric nursing practice. Gillis (1990) did not report the themes in the same way, but her study showed that "the majority of nurses perceived nursing administration to be in control of a number of important variables that could positively affect the use of growth and developmental principles in the work setting" (Gillis, 1990, p. 85). Five years later, this study suggests that nurses see health care market forces playing a greater role in their lack of control on working conditions that influence how effectively psychosocial care is given to pediatric patients. Their comments suggest that the health care delivery system has thrust changes upon them. They do indicate a desire for administrators to show a greater understanding of their stressors to recognize that psychosocial needs are overlooked when patient/nurse ratios increase.

#### Additional Findings

In this study, the quantitative and qualitative evaluation of continuing education programs by Gillis (1990) was intentionally deleted. Though the

information was not sought directly, it is interesting to note that the content analysis of the open-ended questions supports the Gillis finding that there are needs for more extensive continuing education programs on principles of growth and development and the psychosocial care of children.

Data suggest that areas for improvement can be found in the presentation of pediatric psychosocial content. Regarding teaching methodology, subjects rated the observation of children with discussion most favorably, and gave the least favorable rating for the use of self-directed learning guides. Data suggest that nurses prefer more active learning situations, like observation of children with discussion, to the more passive learning that occurs with self-study packets. The qualitative data were consistent with that finding, with numerous respondents suggesting more hands-on clinical learning is desired and needed.

## Limitations of the Study

### Scope

This study was limited in its scope when compared to the Gillis (1990) study it replicated. Due to financial constraints, and in an effort to focus on the components of the questionnaire that were of greatest importance to the researcher, a decision was made to eliminate the questions pertaining to continuing education on the questionnaire. Unfortunately, the typographical error that eliminated four of the variables that assessed inhibiting factors in the work place also limited the study.

The 357 usable responses were greater than the 269 responses in the Gillis (1990) study. The fact that the rate of return was 35.36%, however, makes it necessary to use caution in interpreting the results.

### Validity

Gillis stated, "Validity of the KGDT can only be discussed through logical rather than empirical means. Since the KGDT was not compared to a standardized test, it was impossible to obtain a numerical estimate of the

validity of the test. However, based on logical means, that is, respectable Cronbach alpha and high interrater agreement on each item, one can conclude that the test is valid" (Gillis, 1990, pp. 80-81). Initially, this author reviewed the tool for content validity. One biographical question regarding level of education was altered to more accurately reflect terminology used in the United States. After the tool was determined to have content validity by this researcher, a panel of ten pediatric nurses was asked to review the tool for relevance, clarity, and for the time needed to complete the questionnaire. The questionnaire, including the KGDT, was pilot tested with ten registered nurses who were acquaintances of the researcher. No unclear questions were reported, and no suggestions for editing the questions were received. The questionnaire from Dr. Angela Gillis was used with the educational question revised, with no revisions of the KGDT.

The questionnaire was a rather lengthy one, and the study was probably limited because many of the potential subjects did not have sufficient time to

complete the questionnaire due to its length. It is unknown if the study participants may have hurried through the questionnaire to complete it in less time, resulting in lower KGDT scores. Because the questionnaires were mailed to subjects, completed by them, and returned to the researcher, there is no guarantee that the subjects did not use reference materials, though they were instructed not to do so.

There were some lingering questions in the mind of the researcher about the clarity of some of the choices in several of the questions on the KGDT. One concern was a question in the section about play on the KGDT. The answer to a question about an appropriate activity for a four year old called for "comic and activity books". Given the sensitivity of parents today about the negative influences of violence in some comic books, it is possible the decision was made not to choose that answer based upon the concern for violence, rather than its developmental appropriateness. A better selection would have just stated the choice as "activity books". In another question about play, one

of the incorrect choices is "water guns". Though it was not the correct answer, some subjects may not have chosen that answer based on its association with violence, rather than its developmental considerations. In that same question, two of the other detractors are "a board game" and "checkers". Checkers is considered by many a board game, so this may have been confusing for the study subjects. In retrospect, those questions could have been revised for clarity and to improve the content validity of the KGDT.

#### Reliability

Gillis (1990) reported the internal consistency of the Knowledge of Growth and Development Test (KGDT) was high (Cronbach alpha = 0.80). Gillis also evaluated the KGDT using a discrimination index to assure that the questions could differentiate students of high and low ability.



### Recommendations for Further Study

This study raises questions for further research. Specifically, how will the application of growth and developmental principles be affected by shorter lengths of hospital stays and by the shift to outpatient pediatric treatment? The study should be repeated with an emphasis on nurses' work in outpatient pediatric settings. An important consideration in future studies should be the steps nurses can take to influence working conditions that allow for improvement in the psychosocial care of pediatric patients. The KGDT should be revised to reflect a focus on wellness models of care.

### Implications for Advanced Practice

The findings from this study have increased the body of knowledge about nursing and are especially significant for nurse educators. Nursing has traditionally emphasized care of persons over the lifespan, and has incorporated knowledge from the discipline of developmental psychology. The results of

this study provide additional support that there is room for improvement in the education of nurses about growth and developmental principles. Because nursing accentuates the entire lifespan within its metaparadigm concept of person, efforts should be made to improve knowledge of growth and development within the context of nursing. It is important that nursing knowledge effectively guides nursing practice. This study identifies barriers to the provision of developmentally appropriate care. The study also provides some suggestions concerning methods that might be useful in achieving the goal of improvement of nursing knowledge and use of growth and development principles, that has been identified in the literature as a critical need (Betz, Hunzberger & Wright, 1994; Hart, Mather, Slack & Powell, 1992; Mott, James & Sperhac, 1994; Petrillo & Sanger, 1980; Pontious, 1982; Prugh, 1983; Wong, 1995). This information should be useful as nurse educators plan curricular changes.

The results of this study should be useful in pediatric nursing practice as well. This study

suggests that mentoring programs, positive reinforcement, an increased understanding of the stressors involved in pediatric care, and valuing the specialty practice of pediatric nursing are helpful to pediatric nurses as they work to provide quality psychosocial pediatric nursing care at a time when health care resources are limited.

Ideas for further research may be generated from this study. Some specific suggestions for further research were noted, but other ideas may be spawned from this study.

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APPENDIX A

PERMISSION FROM DR. GILLIS



ST. FRANCIS XAVIER UNIVERSITY

ANTIGONISH, NOVA SCOTIA  
CANADA  
B2G 1C0

DEPARTMENT OF NURSING

April 7, 1994

Janet K. Ekvall  
Marshalltown Community College  
3700 S. Center Street  
Marshalltown, IA 50158

Dear Janet:

I am very pleased to grant you permission to use the KGDT in your graduate work at Drake University. I believe replication is a very valuable means to contributing to the development of the discipline and to our expanding body of nursing knowledge.

I wish you much success with your research and I look forward to reading your results.

Sincerely,

Angela Gillis, Ph.D., R.N.  
Associate Professor and Chair

APPENDIX B  
APPROVAL OF PROPOSAL

DRAKE UNIVERSITY  
DIVISION OF NURSING

APPROVAL OF THESIS PROPOSAL

Student Janet K. Ekvall

Title of Thesis Proposal NURSES' KNOWLEDGE OF GROWTH AND  
DEVELOPMENTAL PRINCIPLES IN MEETING PSYCHOSOCIAL NEEDS OF  
HOSPITALIZED CHILDREN

Approved by:

<u>Linda K. Brady</u>	<u>10/8/94</u>
Thesis Advisor	Date
<u>Sandra L. Sellers</u>	<u>10/10/94</u>
<u>Charlene M. Baskie</u>	<u>10/10/94</u>
Thesis Committee Member	Date
<u>Kelly Schaefer</u>	<u>10/10/94</u>
Thesis Committee Member	Date
<u>Anthony</u>	<u>10/11/94</u>
Dean, College of Pharmacy and Health Sciences	Date



APPENDIX C

PILOT TEST COVER LETTER AND EVALUATION

April 17, 1995

Dear Nursing Colleague:

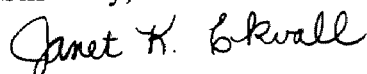
As a pediatric nurse in Iowa, you are probably aware that opportunities for research in our specific area of nursing practice are limited. I am writing to request your assistance in my masters thesis, which is a study of the understanding and use of pediatric growth and development by pediatric nurses in Iowa. I have chosen a questionnaire that was developed in Canada to assess nurses' knowledge and use of growth and developmental principles in pediatric nursing practice. The purpose of the study is to get a clearer picture of pediatric nursing practice in Iowa, and to identify conditions that may lead to more appropriate nursing care for pediatric patients. An attempt is made in this descriptive study to include all registered nurses who self-reported to the Iowa Board of Nursing that pediatric nursing is their primary area of nursing practice. The purpose of the research is to learn more about pediatric nurses' knowledge and use of growth and developmental principles in nursing practice. You have an opportunity to contribute to a better understanding of pediatric nursing practice in Iowa. Risks are minimal, but it will probably take about thirty minutes to complete the questionnaire. Your privacy is important and your responses and scores will remain confidential. Your participation is voluntary, and there will be no repercussions for your refusal to participate. Your consent will be implied by your return of the questionnaire. I will be happy to share my results with you by mail at your request. Should you have questions or concerns, they may be shared with me or with my thesis advisor. Our names and addresses are:

Janet K. Ekvall, R.N., B.S.N.  
Masters Candidate, Drake University  
1310 Marshall Drive  
Marshalltown  
IA 50158

Dr. Linda Brady, R.N., Ph.D.  
Associate Professor and Chair  
Department of Nursing  
220 Olin Hall  
Des Moines  
IA 50311-4505

To participate, please fill out the enclosed questionnaire, which is divided into the following four sections: 1) General information; 2) Educational Experience; 3) Factors Influencing the Application of Growth and Development Knowledge by Pediatric Nurses; and 4) Knowledge of Growth and Development. It is important that you complete the questionnaire without checking outside references. When you have completed the questionnaire, I would like you to fill out the evaluation of the questionnaire which is also included. Enclosed you will find a pre addressed, stamped envelope in which to return your study and your evaluation of the questionnaire. Please return them within one week of receiving the questionnaire. I want to thank you very much for contributing to the advancement of pediatric nursing practice.

Sincerely,



Janet K. Ekvall, R.N., B.S.N.  
Masters Candidate, Drake University

You have been selected to pre-test the enclosed questionnaire. You were selected because you are similar to the people who will complete the questionnaire for the study. Please note the time that it takes you to complete the questionnaire. When you have completed the questionnaire, please assist me by completing the following questions. Feel free to make comments that will lead to refinement of the questionnaire. Thank you for your assistance.

1. Time needed to complete the enclosed questionnaire: \_\_\_\_\_
2. Were the directions on how to complete the questionnaire written in a manner that was easy for you to understand?
  1. ☐ Yes
  2. ☐ NoComments: \_\_\_\_\_
3. Did the title clearly tell you what the questionnaire was about?
  1. ☐ Yes
  2. ☐ No
  3. ☐ UnsureComments: \_\_\_\_\_
4. Were there any questions that you were unable to answer correctly or completely because the question was not asked clearly?
  1. ☐ Yes Please explain: \_\_\_\_\_
  2. ☐ No
  3. ☐ Unsure
5. Were there any multiple choice questions that did not provide a complete list of choices?
  1. ☐ Yes Please explain: \_\_\_\_\_
  2. ☐ No
6. Were there any questions that just did not seem to fit you?
  1. ☐ Yes Please explain: \_\_\_\_\_
  2. ☐ No
7. Were there any words in the questions for which you did not know the meaning?
  1. ☐ Yes Which words? \_\_\_\_\_
  2. ☐ No
8. Were you provided with clear directions as to what to do with the questionnaire when finished?
  1. ☐ Yes
  2. ☐ NoComments: \_\_\_\_\_
9. Were the purposes of the study clearly explained to you?
  1. ☐ Yes
  2. ☐ NoComments: \_\_\_\_\_
11. Feel free to make any other comments or suggestions: \_\_\_\_\_

Thanks so very much for your help!  
Janet

APPENDIX D  
MAJOR STUDY COVER LETTER

May 26, 1995

Dear Nursing Colleague:

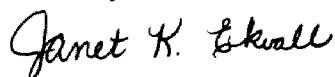
As a pediatric nurse in Iowa, you are probably aware that opportunities for research in our specific area of nursing practice are limited. I am writing to request your assistance in my masters thesis, which is a study of the understanding and use of pediatric growth and development by pediatric nurses in Iowa. I have chosen a questionnaire that was developed in Canada to assess nurses' knowledge and use of growth and developmental principles in pediatric nursing practice. The purpose of the study is to get a clearer picture of pediatric nursing practice in Iowa, and to identify conditions that may lead to more appropriate nursing care for pediatric patients. An attempt is made in this descriptive study to include all registered nurses who reported to the Iowa Board of Nursing that pediatric nursing is their primary area of nursing practice. You have an opportunity to contribute to a better understanding of pediatric nursing practice in Iowa. Risks are minimal, but it will probably take about thirty minutes to complete the questionnaire. Your privacy is important and your responses and scores will remain confidential. Your participation is voluntary, and there will be no repercussions for your refusal to participate. Your consent will be implied by your return of the questionnaire. I will be happy to share my results with you by mail at your request. Should you have questions or concerns, they may be shared with me or with my thesis advisor. Our names and addresses are:

Janet K. Ekvall, R.N., B.S.N.  
Masters Candidate, Drake University  
1310 Marshall Drive  
Marshalltown  
IA 50158

Dr. Linda Brady, R.N., Ph.D.  
Associate Professor and Chair  
Drake University Department of Nursing  
220 Olin Hall  
Des Moines  
IA 50311-4505

To participate, please fill out the enclosed questionnaire, which is divided into the following four sections: 1) General information; 2) Educational Experience; 3) Factors Influencing the Application of Growth and Development Knowledge by Pediatric Nurses; and 4) Knowledge of Growth and Development. It is important that you complete the questionnaire without checking outside references. Enclosed you will find a pre addressed, stamped envelope in which to return your questionnaire. Please return it within one week. I want to thank you very much for contributing to the advancement of pediatric nursing practice.

Sincerely,



Janet K. Ekvall, R.N., B.S.N.  
Masters Candidate, Drake University

APPENDIX E  
MAJOR STUDY QUESTIONNAIRE

# SURVEY OF PSYCHOSOCIAL DEVELOPMENT IN CHILDREN AND ADOLESCENTS

## Section 1: General Information

Please read each of the following questions and check the answer which best indicates your response. Be sure to answer all questions.

1. Are you currently employed in the nursing of infants, children, or adolescents?

- No.....0 ( )
- Yes, full time.....1 ( )
- Yes, regular part time.....2 ( )
- Yes, as casual or relief...3 ( )
- Yes, but only as  
necessary in a small  
general hospital .....4 ( )
- Other.....5 ( )

IF NO, do not complete this questionnaire, but return it in the stamped self-addressed envelope provided. It is required to accurately record the response.

2. In what type of health care facility are you employed?

- Children's hospital.....1 ( )
- Community hospital with a  
separate pediatric unit....2 ( )
- Community hospital without  
a separate pediatric  
unit.....3 ( )
- Dept. of Community Health..4 ( )
- Doctor's office.....5 ( )
- Special clinic.....6 ( )
- Other (specify).....7 ( )

3. If you work in a children's hospital, on what type of unit do you work?

- Medical-surgical.....1 ( )
- Out-patient.....2 ( )
- Emergency.....3 ( )
- I.C.U. ....4 ( )
- Specialty unit (i.e.  
oncology, neurology, etc.)..5 ( )
- Other (specify).....6 ( )
- N/A- Do not work in a  
special hospital.....7 ( )
- Work in general children's  
ward only.....8 ( )

4. Approximately how many years has your work included the nursing care of children?

(Specify number) \_\_\_\_\_ years

5. What is your current staff position?

- Staff nurse.....1 ( )
- Head nurse.....2 ( )
- Supervisor.....3 ( )
- Instructor.....4 ( )
- Director.....5 ( )
- Other (specify).....6 ( )

6. What is your marital status?

- Single.....1 ( )
- Married.....2 ( )
- Separated.....3 ( )
- Divorced.....4 ( )
- Widowed.....5 ( )

7. Sex: Male.....1 ( )  
Female.....2 ( )

8. How many children do you have?

- None.....0 ( )
- 1-2.....1 ( )
- 3-4.....2 ( )
- 5-6.....3 ( )
- 7 or more.....4 ( )

See the questions on the back!

## Section 2: Educational Experience

The following questions refer to your educational experience. It may be difficult for you to recall answers to some of the questions. Please answer them as accurately as possible.

1. What is your level of educational preparation? (Check as many as apply)  
Associate degree.....1 ( )  
Diploma.....2 ( )  
Baccalaureate Degree.....3 ( )  
    In nursing.....4 ( )  
Masters degree .....5 ( )  
    In nursing.....6 ( )  
    \*Note clinical specialization if appropriate \_\_\_\_\_  
    \_\_\_\_\_   
Ph.D. ....7 ( )  
    In nursing.....8 ( )
  2. How many years has it been since graduation from your basic nursing program?  
Less than 1 year.....1 ( )  
12-24 months.....2 ( )  
25-36 months.....3 ( )  
37-48 months.....4 ( )  
5 years or longer.....5 ( )
  3. In what manner was content related to growth and development presented in your nursing program?  
Can't remember.....1 ( )  
Taught as a separate course..2 ( )  
Incorporated into the pediatric course.....3 ( )  
Taught incidentally in clinical conference.....4 ( )  
Incorporated throughout the program, in addition to being taught as a separate course.....5 ( )  
No content regarding growth and development was presented.....6 ( )  
Other (specify).....7 ( )
  4. Who provided the instruction regarding growth and development content in your nursing program?  
Can't remember.....0 ( )  
Taught by nursing faculty...1 ( )  
Taught by non-nursing faculty.....2 ( )  
Joint effort by nursing faculty & visiting lecturers.....3 ( )  
Other (specify)\_\_\_\_\_ 4 ( )
  5. How soon following the content presentation were you given an opportunity to apply this information in a practice setting?  
Can't remember.....0 ( )  
Simultaneously: theory and practice integrated.....1 ( )  
Within 6 months.....2 ( )  
7-12 months.....3 ( )  
13-24 months.....4 ( )  
25-36 months.....5 ( )  
Other (specify)\_\_\_\_\_ 6 ( )
- Please answer the following using the seven point scale provided.
6. Approximately how much of your undergraduate program dealt with pediatric psychosocial developmental issues?  
Minimal 1 2 3 4 5 6 7 Extensive
  7. How relevant was the pediatric psychosocial content to your present work experience?  
Minimal 1 2 3 4 5 6 7 Extensive

If NO, go directly to question #6



8. Please rate the effectiveness of each of the following as a means to learn about psychosocial development theory in the nursing care of children.

- a) Lecture  
 very 1 2 3 4 5 6 7 very  
 ineffective effective
- b) Structured group discussion  
 very 1 2 3 4 5 6 7 very  
 ineffective effective

- c) Informal group discussions  
 very 1 2 3 4 5 6 7 very  
 ineffective effective
- d) Self-directed learning guide  
 very 1 2 3 4 5 6 7 very  
 ineffective effective
- e) Observation of children & discussion  
 very 1 2 3 4 5 6 7 very  
 ineffective effective

9. In what way can nursing education assist nurses (students or R.N.s) to meet the psychosocial needs of infants, children and adolescents they nurse?

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### SECTION 3: Factors Influencing the Application of Growth and Development Knowledge by Pediatric Nurses

In response to the changing needs of society, nursing of children has changed considerably. The following questions refer to nursing activities which are included in the care of children.

1. Below is a list of frequently performed nursing process activities. On a scale of 1 to 7, please rank each activity in terms of its importance to you in your work setting.

- |  |   |
|--|---|
| <p>a) Providing emotional support to children.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>b) Transcribing doctors' orders.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>c) Teaching parents home management of illness.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>d) Identifying nursing problems.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>e) Preparing children psychologically for procedures and surgery.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> | <p>f) Encouraging children to express feelings.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>g) Dispensing medication.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>h) Recognizing and reporting significant physical developments.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>i) Encouraging parenting and participation in care.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> <p>j) Collecting and transporting specimens.<br/>           not at all 1 2 3 4 5 6 7 very<br/>           important important</p> |
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See the questions on the back!

2. The following are factors which may inhibit nurses from applying growth and development concepts in the work setting. Please rate the overall importance of these factors as obstacles in your use of growth and development principles in the work setting.

- a) Heavy workload.  
not at all 1 2 3 4 5 6 7 very  
important important
- b) Lack of knowledge.  
not at all 1 2 3 4 5 6 7 very  
important important
- c) Lack of response from the  
child.  
not at all 1 2 3 4 5 6 7 very  
important important
- d) Emphasis on technological  
care.  
not at all 1 2 3 4 5 6 7 very  
important important

3. How important do you perceive psychosocial factors to be in caring for pediatric patients?  
not at all 1 2 3 4 5 6 7 very  
important important

5. Rate your overall level of job satisfaction as a provider of nursing care to infants and children.  
very 1 2 3 4 5 6 7 very  
dissatisfied satisfied

4. In the past month, how often were you positively reinforced by the following staff for using age appropriate nursing measures in providing nursing care?:

	Never	Rarely	Seldom	On Occasion	Almost Always	Always
Staff nurse						
Head nurse						
Super- visor						
Instructor						
Director						
Physician						
Therapist						

6. What are your future career goals?

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7. In what ways can nursing practice better assist nurses to meet the psychosocial needs of infants, children, and adolescents for whom they provide care?

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#### Section 4: Knowledge of Growth and Development

The following questions in section 4 are designed to test your "working knowledge" of pediatric growth and development. Please answer the questions directly; the purpose of the survey will be defeated if you refer to source books at this time to determine your answer.

##### Part 1: Play

You are interacting with a group of children in the play room of the hospital clinic. To plan appropriate play for children of various ages you need to have knowledge of their developmental norms. The following questions refer to this situation. Check the ONE most appropriate response.

1. Which of the following toys would you select for an immobilized 7 year old with a fractured pelvis?

- Walkman radio and cassette player. 1 ( )
- Magnetic game board..... 2 ( )
- Pounding games & bean bags..... 3 ( )
- Comic and activity books..... 4 ( )

2. You should encourage two 6 year old boys to play with:

- A board game..... 1 ( )
- Water guns..... 2 ( )
- Checkers..... 3 ( )
- Model clay..... 4 ( )

3. Four year old Alan is having difficulty playing with the other children. You understand that it is normal for Alan to:

- Exaggerate & boast to impress others..... 1 ( )
- Have temper tantrums and negativism..... 2 ( )
- Engage in parallel play and solitary play..... 3 ( )
- Be very dependent on parents..... 4 ( )

4. To meet the emerging psychological needs of the toddlers in the playroom you should:

- Provide a variety of oral exercises..... 1 ( )
- Encourage separation from the mother..... 2 ( )
- Facilitate independent activities and give choices..... 3 ( )
- Hug and hold the child frequently.. 4 ( )

5. Which game is likely to be the favorite of an 8 month old infant?

- Rolling a ball to mother..... 1 ( )
- Peek-a-hoo..... 2 ( )
- Hide and seek..... 3 ( )
- This little piggy..... 4 ( )

See the questions on the back!

### Part 2: Infant Development

Mr. & Mrs. M. were emotionally upset when their baby daughter Ann was born with a cleft lip and palate. The following items refer to this situation. Check the most appropriate response.

1. Which nursing intervention would be most supportive to the parents at this time?

- Discourage them from talking about the baby?.....1( )
- Encourage them to express their worries and concern.....2( )
- Tell them not to worry because the defect can be repaired.....3( )
- Show them photographs of babies who had similar defects.....4( )

2. Five months later Ann returns to the hospital for surgery. She has a large stuffed animal in the crib. You decide she needs additional toys to play with and select:

- A bright red ball.....1( )
- A rattle.....2( )
- A set of blocks.....3( )
- A teddy bear.....4( )

3. What is the most important factor in promoting hospitalization as a positive experience for Ann?

- Her previous hospital visit.....1( )
- Gratification of all her wishes....2( )
- Never leaving her with strangers...3( )
- Assurance of affection and safety..4( )

4. Mrs. M is concerned about spoiling Ann by picking her up when she cries. Your best response to this is:

- "Allow her to cry for 10 minutes, then pick her up for 5 minutes" ...1( )
- "Check to see if she is wet or soiled, change her if necessary and let her cry herself to sleep...2( )
- "Babies of this age cry whenever they are hungry. Try feeding her whenever she cries".....3( )
- "Babies need comforting and holding. You cannot spoil her if you are meeting her needs.".....4( )

5. Six month old Ann's physical tasks are within the norms when she is able to:

- Crawl instead of hitching.....1( )
- Turn completely over, with rest periods during the turn.....2( )
- Raise to a sitting position alone with good coordination.....3( )
- Stand erect with minimal support...4( )

### Part 3: Toddler Development

Two year old Mike Cox is admitted to the hospital for the second repair of his clubfoot. Mrs. Cox cannot stay overnight with her son. On the morning after admission, Mike is standing in his crib crying. He refuses to be comforted and calls for his mother. The following items refer to this situation. Check the most appropriate response.

1. You approach Mike to bathe him and he screams louder. This behavior is recognized as the stage of protest, and you:

- Pick him up and walk him around the room.....1( )
- Sit by the crib and bathe him later when his anxiety decreases.....2( )
- Decide he really does not need a bath when his is this upset.....3( )
- Fill the basin with water and proceed to bathe him.....4( )

2. On the third postoperative day Mike begins to regress and lies quietly in his crib with his blanket. You recognize that Mike is in a stage of:

- Denial.....1( )
- Mistrust.....2( )
- Rejection.....3( )
- Despair.....4( )

3. During his second week of hospitalization, Mike smiles easily, goes to all the nurses happily, and no longer cries when his mother goes home. After leaving Mike's room, Mrs. Cox tells you she is pleased that Mike is adjusting well. Before responding to Mrs. Cox, you understand Mike's behavior and realize that he:

- Is repressing his feelings for his mother.....1( )
- Has established a routine and feels safe.....2( )
- Feels better physically so his behavior has improved.....3( )
- Has given up fighting and accepts the separation.....4( )

4. You attempt to follow the methods that Mrs. Cox used at home in the daily care of Mike, i.e. feeding, bathing, sleeping. Select the rationale for maintaining consistency in the daily care of a hospitalized 2 year old.

- To promote a sense of security....1( )
- To prevent behavioral regression..2( )
- To imitate the parent caregiver...3( )
- To reduce negativism.....4( )

#### Part 4: Preschoolers

Four year old Roger is admitted to the pediatric unit with a diagnosis of nephrosis. The following items refer to this situation. Check the most appropriate response.

1. During his nap, Roger wets the bed. The best approach by the nurse would be:

- Change his clothes and make no issue of it.....1( )
- Explain that big boys should try to call the nurse.....2( )
- Ask him to help you remake the bed.....3( )
- Change his bed, putting a rubber sheet on it.....4( )

2. When providing nursing care to Roger, you should remember that the preschooler's greatest fear is of:

- Isolation.....1( )
- Intrusive procedures.....2( )
- Death.....3( )
- Pain.....4( )

5. Mike has a temper tantrum when he is refused his favorite nerf ball. What phase of development is associated with a child who has a temper tantrum because he is refused a toy?

- Initiative.....1( )
- Autonomy.....2( )
- Industry.....3( )
- Guilt.....4( )

3. A milestone in development that occurs during the preschool years is:

- Learning to read.....1( )
- Ability to postpone gratification..2( )
- Learning bowel and bladder control.....3( )
- Ability to manipulate writing tools.....4( )

See the questions on the back!

4. Because Roger is developing a sense of initiative, he should be observed frequently to prevent accidents related to:

- Climbing up and down stairs.....1( )
- Defying parental restrictions.....2( )
- Improving hand-eye coordination....3( )
- Imitating adult behavior.....4( )

5. A child of Roger's age (4 years) can be expected to have which of these psychological characteristics?

- The belief that thoughts can hurt people.....1( )
- The ability to empathize with others.....2( )
- Anticipatory anxieties, which tends to keep him out of control.....3( )
- A sense of industry, which tends to help him complete his tasks....4( )

#### Part 5: Schoolage

Karina, age 7 years old is to have a laparotomy and possible appendectomy. The following items refer to this situation. Check the most appropriate response.

1. The physician orders atropine 0.2 mg. IM preoperatively. Which would be the most effective approach to administering the injection to Karina?

- Approach the bed, state what you are going to do and proceed with the injection.....1( )
- Take a firm, consistent approach, reward any positive behaviors, and comment on any negative ones.....2( )
- Let Karina select the injection site, and praise her for her cooperation.....3( )
- Provide Karina with as much information as available about the medication and tell her how it will feel.....4( )

2. Postoperatively, to help relieve Karina's anxiety you would:

- Tell her a story about a girl with similar surgery.....1( )
- Allow her to talk about her feelings.....2( )
- Provide her with bandages, tape, scissors, and a doll.....3( )
- Ask her mother to room with her for several days.....4( )

3. Karina begins thumbsucking after her surgery. Although this was not Karina's behavior preoperatively, you should:

- Report this behavior to the physician.....1( )
- Distract her by playing checkers...2( )
- Accept the thumbsucking.....3( )
- Tell her the thumbsucking causes buck teeth.....4( )

4. While in the hospital convalescing, Karina becomes very board and irritable. She misses her school friends. To help "cheer" Karina, you suggest that she:

- Play chess.....1( )
- Start a collection.....2( )
- Watch TV.....3( )
- Do arithmetic.....4( )

5. Karina, on occasion, awakens screaming during the night, apparently after having a nightmare. Which of the following measures would be most helpful in preventing Karina's nightmares?

- Giving Karina her favorite toy to sleep with.....1( )
- Planning quiet activities for Karina at bedside.....2( )
- Encouraging Karina to tell a story about a girl in a hospital.....3( )
- Providing for only friendly interaction between Karina and other children after the supper hour....4( )

#### Part 6: Adolescence

John, 15 years old, is admitted to the hospital because of minor injuries suffered in an automobile accident. The following items refer to this situation. Check the most appropriate response.

1. The most important nursing intervention to initially perform when admitting John to your unit is:

- Reassure John that everything will be O.K.....1( )
- Provide privacy and offer choices where possible.....2( )
- Ask if he has been hospitalized before.....3( )
- Inform him that M.V.A.s are common during adolescence.....4( )

2. A major factor in the high accident rate among adolescents is:

- Rebellion against parental safety education.....1( )
- Resistance to driver education courses.....2( )
- The abnormally high value placed on risk taking.....3( )
- Striving for peer admiration and acceptance.....4( )

3. John complains to you that his parents make him tell them where he is going, who he will be with, and what he will be doing. Your best response to this statement would be:

- "It must be difficult for you to have such old fashioned parents".....1( )
- "Your parents really don't understand how mature you are".....2( )
- "I believe that it shows courtesy and respect to inform your parents of your whereabouts".....3( )
- "Your parents love you and don't want to hurt you".....4( )

4. John's primary task during adolescence will be to develop a:

- Degree of self-discipline.....1( )
- Sense of right and wrong.....2( )
- Lasting sense of well being.....3( )
- Firm sense of self.....4( )

5. During his hospitalization, John developed an attitude of detachment, boredom, and negativism, which was probably an attempt to:

- Call attention to his newly developed masculinity.....1( )
- Mask his anxiety about his accident and about his future.....2( )
- Act out one aspect of adolescent ambivalence.....3( )
- Cover up his feelings.....4( )

See the questions on the back!

## Part 7: Teaching/Preparation

1. A five year old child is hospitalized for a T & A. Which of the following explanations best meets the child's need to understand what is going to happen to him?

- You will be put to sleep and your tonsils will be snipped out by the surgeon. This operation will keep you from having sore throats and missing school.....1( )
- You will be given medication for sleep and your tonsils will be removed. Afterwards, your throat will be sore, so you'll be given ice cream to eat. When you're awake and feeling better you will go home again.....2( )
- You'll be taken on a cart to the operating room, a large, bright room filled with lots of shiny and interesting equipment. The nurse there will talk to you and the doctor will take care of you.....3( )
- No explanation should be given in order to minimize the child's preoperative fear and anxiety.....4( )

2. A ten year old is admitted for a T & A. Which of the following preparation sessions for surgery would be most appropriate?

- Discussion of surgery with anatomical drawings of the tonsillar area.....1( )
- Read a story about a little child who goes to the hospital for surgery.....2( )
- Show a film in which a child is depicted in the recovery room.....3( )
- Use dramatic play with dolls dressed as hospital personnel and patients.....4( )

3. A 2 1/2 year old is scheduled for a ureteral reimplantation. Which of the following preoperative teaching methods to reduce anxiety would be most effective?

- Read a story about a child who goes to the hospital for surgery.....1( )
- Explain thoroughly the sequence of events which will occur on the operative day.....2( )
- Use dolls and toy replicas of medical equipment to explain what will occur.....3( )
- The child is too young to understand explanations about the surgery. ...4( )

4. The best time to tell the preschool child about an injection is:

- Shortly before you give it.....1( )
- During your discussion of the course of treatment.....2( )
- An hour before you give it.....3( )
- The evening prior to administration.....4( )

5. Susan, an 8 year old girl is brought to the diabetic clinic by her mother. What principles should guide you, the nurse, in giving Susan and her mother instructions concerning needed home care?:

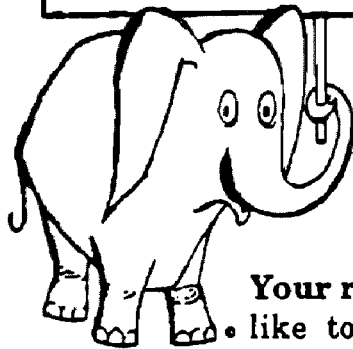
- Transmission of detailed information about diabetes during the first clinic visit will prevent treatment errors.....1( )
- Needed information should be given in small amounts in several successive visits.....2( )
- Susan and her mother will accept only that information which they request.....3( )
- Avoidance of the terms diabetes, insulin, and diet will enable the family to accept Susan's condition without anxiety.....4( )



APPENDIX F  
REMINDER CARD

## Just a Reminder

June 27, 1995



Dear Nursing Colleague:

Recently you should have received in the mail a survey about pediatric nursing and growth and development.

**Your responses are important** and I would like to encourage your participation in the survey. If you have already mailed it back, please disregard this notice and accept my thanks! If you have misplaced your survey form and would be willing to complete one, please drop me a line or phone me at 515-752-8568 (evenings). Thank You!

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